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국제학박사학위논문

Arming South Korea:

Restrained Arms Acquisition in Ballistic Missile Defense and Intelligence, Surveillance, Reconnaissance Capabilities

한국의 동맹안주적 무기획득패턴 연구:
제한적 미사일방어망과 정보감시정찰체계 획득을 중심으로

2020 년 2 월

서울대학교 국제대학원
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ABSTRACT

Arming South Korea:
Restrained Arms Acquisition in Ballistic Missile Defense and Intelligence, Surveillance, Reconnaissance Capabilities

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Despite North Korea's increasing asymmetric nuclear and ballistic missile capabilities, what explains South Korea's restraint in armaments in the ballistic missile defense (BMD) and intelligence, surveillance, and reconnaissance (ISR) capabilities? Unlike how the ability to detect, prevent, preempt, or at least 'hit-to-kill' incoming threats in advance have made both BMD and ISR highly interrelated and critical armaments in other US allies' response to asymmetric threats, South Korea has retained heavy reliance on the US's security provisions and stationing of advanced weapons system.

While existing literatures lended little room for comprehensive comparative analysis, portraying South Korea's alliance-reliant defense system more or less rational, structural, and/or path-dependent continuity from the US's

military presence and the ROK-US combined defense system – the distinctive attributes of the ROK-US alliance – this study finds that South Korea retains intriguing resilience in restraining autonomous defense capabilities in the BMD and ISR capabilities.

Bringing neoclassical realism as major theoretical underpinnings, this study argues that South Korea's relative restraint in autonomous armaments in the BMD and ISR capabilities arises from policy leaders' accumulated state-strategies in reinforcing the alliance-reliance in the state-of-the-art weapons system. As North Korea's emergence as de facto nuclear power aggravated South Korea's reliance on asymmetric division of force structure with the US (alliance structure), the vacillating threat perception on North Korea and armament priorities in lower-cost offensive strike capabilities in both progressive and conservative regimes reinforced South Korea's confinement to alliance-reliant armaments in the BMD and ISR.

Stripped to the essence, neoclassical realism is what Ira Katznelson, Barry R. Weingast (2005), and Park Cheol Hee (1998) would call a 'situated rationalist' approach to states' armaments, in which variation in states' arming becomes more *conditional* to how external threats become *filtered* through policy leaders' perception and their domestic contexts (Rose 1998; Schweller 2004; 2006; Taliaferro 2006). While systemic imperatives remain primary forces in driving states' arms build-up, states' armaments can be inflated and/or abated, 'situational'

to policy leaders' perceived realities in neoclassical realism than in unilateral pursuit for power-maximization.

Chapter III, in application of the theory, focuses on attenuating previous literatures' deterministic or exceptionalist inclination in constructing understanding on South Korea's armaments. Putting forth a cross-national framework to contextualize South Korean case among other US allies, including Japan, Taiwan, UK, and Germany, this study argues that while the structural forces arising from the level of asymmetric threats and alliance structure with the US are primary in shaping overall trajectories of the US allies' armaments in the BMD and ISR, variations under similar exogenous influences arise from how the policy leaders perceive and respond to the given asymmetric threats (policy leaders' threat perception) within their geopolitical context, and to the extent that they seek and mobilize resources for self-reliant or alliance-reliant armaments.

In the latter half of the dissertation, Chapter IV, this study further elaborates on South Korea's 'accumulated' restraint or ambivalence from cross-regime comparisons on South Korea's armaments in the BMD and ISR capabilities. This study disconfirms the conventional view that the so-called "progressive-conservative split" among policy leaders has been at the heart of South Korea's limited armaments, particularly when it comes to the state-of-the-art BMD and ISR weapons system. While progressive regimes have been deemed more reconciliatory to North Korea and seek more autonomous policy towards

armament and alliance-reliance, when conservatives were seen as more hardlined to North Korea, favorable to pro-alliance armaments as means for security, ideological divide mattered less when it came to the BMD and ISR capabilities. Although policy and ideological divergence have appeared to cause variations in the outset of each administration from President Kim Dae-jung to Park Geun-hye (1998-2017), both progressive and conservative regimes have recurred to alliance-reliance in the BMD and ISR under the existing division of labor under the ROK-US combined defense system.

Although progressive regimes under Kim Dae-jung (1998-2003) and Roh Moo-hyun (2003-2008) administrations have taken more reconciliatory approach to North Korea's asymmetric threats and emphasis on self-reliance in armaments, the progressive regimes have been situationally induced, however "reluctant," to resume to alliance-reliant armaments in the BMD and ISR capabilities. When power transferred back to conservative regimes under Lee Myung-bak (2008-2013) and Park Geun-hye (2013-2017) administrations, North Korea's rapid increases in asymmetric threats have restored pro-alliance or alliance-reliant proclivity in armaments, reinforcing South Korea's restrained armament in autonomous BMD and ISR capabilities. Punctuated with economic crisis, ebb and flow in North Korea's asymmetric provocations, caught in between the increasingly contentious US-China rivalry in the region, continuity than change can be found in arming in the lower-cost, possibly homegrown, offensive missiles

and conventional strike capabilities. Neither progressive and conservative governments have pursued armaments beyond the structural influences from asymmetric capability gap with North Korea and resilient asymmetric division of force structure with the US.

This study concludes in Chapter V with discussions on the progressive Moon Jae-in administration and implications of the study.

Keywords: Arms Acquisition, ROK-US Alliance, Neoclassical Realism, Ballistic Missile Defense (BMD), Intelligence, Surveillance, and Reconnaissance (ISR) Capabilities, Progressive-Conservative Split
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LIST OF ABBREVIATIONS

ABM	Anti-Ballistic Missile Treaty
AEW	Airborne Early Warning
AEW&C	Airborne Early Warning and Control
BMD	Ballistic Missile Defense
BMDI	Ballistic Missile Defense Initiative
CDIP	Combined Defense Improvement Program
CDU	Christian Democratic Union
CFC	Combined Forces Command
CMCC	Counter-Missiles Capability Committee
DAPA	Defense Acquisition Program Administration
DMZ	Demilitarized Zone
DPJ	Democratic Party of Japan
DPP	Democratic Progressive Party (Republic of China)
DSCA	Defense Security Cooperation Agency (US)
DSP	Defense Support Program (Satellite)
EDPC	Extended Deterrence Policy Committee
ELINT	Electronic Intelligence
EW	Electronic Warfare
FIB	Force Improvement Budget

FMF	Foreign Military Financing
FMS	Foreign Military Sales
GMD	Ground-Based Midcourse Defense System
GPALS	Global Protection Against Limited Strikes
GPR	Global Posture Review
HEU	Highly-enriched Uranium
HUAV	High-altitude Unmanned Aerial Vehicle
HUMINT	Human Intelligence
ICBM	Intercontinental Ballistic Missile
IGS	Information Gathering Satellites
IMINT	Image Intelligence
IRBM	Intermediate-range Ballistic Missile
ISR	Intelligence, Surveillance, and Reconnaissance
JFCC IMD	Joint Functional Component Command for Integrated Missile Defense
JTAMDO	Joint Theater Air and Missile Defense Organization
KAMD	Korea Air Missile Defense
KDX	Korean Destroyer eXperimental
KH	Keyhole (Satellite)
KIDD	Korea-US Integrated Defense Dialogue
KMPR	Korea Massive Punishment and Retaliation Plan
KMT	Kuomintang Party (Republic of China)
KODEF	Korea Defense and Security Forum

KSLV	Korea Space Launch Vehicle
L-SAM	Long-range Surface-to-Air Missile
LDP	Liberal Democratic Party
M-SAM	Medium-range Surface-to-Air Missile
MDA	Mutual Defense Agreement
MDL	Military Demarcations Line
MRBM	Medium-range Ballistic Missile
MRLS	Multiple-launch Rocket System
MTCR	Missile Technology Control Regime
NATO	North Atlantic Treaty Organization
NIS	National Intelligence Service
NMD	National Missile Defense
NPT	Non-proliferation Treaty
NSC	National Security Council
OPCON	Operational Control
PAC-2	Patriot Advanced Capability-2
PAC-3	Patriot Advanced-Capability-3
ROC	Required Operational Capabilities
ROKFC	Republic of South Korea Funded Construction
SAM-X	Surface-to-air Missile eXperimental
SBIRS	Space-Based Infrared System
SCM	Security Consultative Meeting

SDI	Strategic Defense Initiative
SDP	Social Democratic Party
SIGINT	Signals Intelligence
SLBM	Submarine-launched Ballistic Missile
SLV	Satellite Launch Vehicle
SM-2	Standard Missile-2
SM-3	Standard Missile-3
SMA	Special Measures Agreement
SOFA	Status of Forces Agreement
SRBM	Short-range Ballistic Missile
START	Strategic Arms Reduction Treaty
THAAD	Terminal High Altitude Area Defense
TMD	Theater Missile Defense
TPAE	Three Principles of Arms Exports
UAV	Unmanned Aerial Vehicle
USFJ	US Forces Japan
USFK	US Forces Korea
USSTRATCOM	US Strategic Command

A NOTE ON CONVENTIONS

Korean names throughout the text are presented in Korean form, in which the surname precedes the given name, in reverse order of Western standard. In-text citations for Korean authors are also presented in full Korean names in Korean form.

I. INTRODUCTION

1. Puzzle: South Korea's Restraint in Armaments

Since the first test-launch of Scud-based short-range ballistic missile (SRBM) in 1984, North Korea's pursuit of asymmetric nuclear deterrent has emerged as the predominant security threat on the Korean Peninsula. Notwithstanding diverse international, regional, and bilateral efforts over the last two decades to halt North Korea's bid to acquire asymmetric capabilities, North Korea has accumulated to a total of 117 ballistic missile tests and six nuclear tests (The CNS North Korea Missile Test Database),[1] becoming capable of delivering both conventional and nuclear-tipped ballistic missiles to South Korea, Japan, the Pacific Theater, and now the US mainland.[2]

While rivaling powers' increasing asymmetric capabilities have impelled other US allies to seek arms build-up in the ballistic missile defense (BMD) and intelligence, surveillance, and reconnaissance (ISR) capabilities as interrelated conventional means to detect, prevent, preempt, or at least 'hit-to-kill' incoming

[1] SRBMs and MRBMs, ranging from Hwasong-6 (Scud-C), Hwasong-5 (Scud-B), Hwasong-9 (Scud-ER, Extended Range), Hwasong-7 (*Nodong,* Scud-D), recent Scud-C (KN-18) and Scud-B (KN-21) variants with maneuvering reentry vehicle (MaRV), as well as Soviet's Tochka-derived Hwasong-11 (KN-02 or Toksa); *Taepodong* and *Musudan* IRBMs; KH-35 and KN-01 cruise missiles. Seven tests in the 1980s (1984: 3 success, 3 fail; 1986: 1 unknown), nine in the 1990s (1990: 1 success, 1 fail; 1991: 1 success; 1992: 1 fail; 1993: 3 success, 1 unknown; 1998: 1 fail), fifteen in the 2000s (6 successful, 1 failed in 2006; 7 successful, 1 failed in 2009), and eighty-six in the 2010s, accumulating to a total of 117 tests. See, the CNS North Korea Missile Test Database.

[2] With the latest test-launch of intercontinental ballistic missile (ICBM), Hwasong-15 (KN-22) in 2017, see, US Office of the Secretary of Defense (2014: 10); Montgomery (2018: 30).

threats in advance, South Korea has shown intriguing level of restraint in autonomous armaments in both BMD and ISR. In the realms of BMD, South Korea has been constrained to the low-end, lower-tier variants such as ground-based Patriot Advanced Capability-2s (PAC-2), some PAC-3 upgraded PAC-2s, and sea-based Standard Missile-2s (SM-2), mostly without the so-called "hit-to-kill" technology that is critical for intercepting incoming targets directly before hitting the ground. With continued postponements in plans for advanced military satellites and reconnaissance aircrafts, South Korea's ISR capabilities have also continued to be the "most essential but vulnerable field for the ROK armed forces" (Ministry of National Defense, ROK, 1994: 106). Rather than autonomous armaments in the BMD and ISR capabilities, South Korea retained instead its overarching reliance on the US's provision of extended nuclear deterrence and stationing of advanced BMD and ISR weapons system (US Forces Korea, USFK).

Although existing studies on South Korea's armaments inclined to treat South Korea's restraint more or less rational, structural, and/or path-dependent continuity from the US's military presence and the ROK-US combined defense system – the unique attributes of the ROK-US alliance – this study finds a revisit to the phenomenon critical. Other than North Korea's emergence as de facto nuclear power, attention should be drawn to the sheer number of South Korea's arms spending. In terms of military expenditures, South Korea has emerged as the top tenth largest spender as of 2018 with $43.1 billion. From 1990 to 2018, South Korea has spent a total of $746.1 billion, exceeding the amount spent by other US allies in

the respective period, such as Australia ($509 billion), Israel ($425.5 billion), and Taiwan (Republic of China, PRC, $300.5 billion). South Korea has been also the third largest importer of the US's weapons system from 2008 to 2017. According to data released by the US Defense Security Cooperation Agency (DSCA), the largest destination of the US's armaments from 2008 to 2017 went to Saudi Arabia ($10.6 billion), followed by Australia ($7.3 billion), and South Korea ($6.7 billion). Although the existing literatures' implicit or explicit emphasis on the distinctiveness of the ROK-US alliance lended little room for comprehensive comparative analysis, this dissertation finds that South Korea's restraint in autonomous BMD and ISR capabilities is, as this dissertation calls, an intriguing "complacency" for autonomous defense capabilities.

South Korea's relative restraint in autonomous armaments becomes most explicit when juxtaposed to another US ally like Japan in the region that has shown active armaments in both BMD and ISR, even to the extent that the armaments have become "useful redundancy" to the US-stationed weapons system under US Forces Japan (USFJ).[3] The comparison becomes most explicit from how South Korea and Japan diverged in their responses to North Korea's first *Taepodong*-launch in 1998 (intermediate-range ballistic missile, IRBM). When the Taepodong overflew Japan and landed in the Pacific Ocean, South Korea's first formal response entailed its announcement in 1999 that South Korea will not acquire nor join the US-led BMD systems (then, Theater Missile Defense, TMD). While South Korea denied BMD,

[3] US Deputy Commander of the Space & Missile Defense Command, General John Seward, January 2008.

ostensibly for inadequate "economic and technological capacity,"[4] Japan in the same year has signed the agreement to join joint research and development program (Cronin 2002) for BMD technology with the US.[5] Coupled with growing concerns on China's military advancements, Japanese cabinet announced its decision in 2003 to acquire autonomous multi-tier BMD system including the ground-based PAC-3 for lower-tier and ship-based SM-3 (Block IA) for upper-tier defense (Japan Ministry of Defense 2017: 328; Mizokami 2017; Takahashi 2012: 7; Japan Ministry of Defense 2008).

When North Korea resumed to consecutive ballistic missile tests and launched its first underground nuclear test in October 2006, South Korea continued to restrain its acquisitions to low-end missile defense capabilities such as the second-hand ground-based PAC-2 from Germany and ship-based SM-2. Capping the acquisitions to low-end and lower-tier assets as interim choices, South Korea insisted on building indigenously produced Korea Air Missile Defense (KAMD) system. Japan, in contrary, expedited its original plans for acquiring autonomous BMD capabilities. Also, since 2006, as notably "enthusiastic partner" for US's BMD architecture in East Asia (Roehrig 2017), Japan welcomed US's deployment of BMD assets including the PAC-3, X-band radar, aegis destroyers equipped with SM-3s (Ministry of Foreign Affairs of Japan 2006). By 2007, just a year after South Korea's acquisition of second-hand PAC-2s from Germany, Japan began to field its first batch

[4] Statement by then Defense Minister Chun Yong-taek, March 5, 1999.
[5] Statement of the Chief Cabinet Secretary, Japan-US Joint Technological Research on Ballistic Missile Defense, December 25, 1998.

of PAC-3 and launched its first test-flight of SM-3 on their aegis destroyers (Japan Ministry of Defense 2008; Takahashi 2012: 11). By 2010s, Japan has been operating seventeen PAC-3 batteries (more than twenty including PAC-2s), six aegis destroyers with SM-3 interceptors, as well as engaging in the co-production deal with the US for upgraded SM-3 Block IIA interceptors (Hoff 2015). Although South Korea has seen incremental pursuit for missile defense capabilities since North Korea's first nuclear test in October 2006, the bottom line is that South Korea's BMD acquisitions have been belated and capped to lower-end defense articles than other US allies under similar asymmetric threats. South Korea's decision to acquire the advanced ground-based PAC-3 has been seven years behind Japan's first deployment of PAC-3 in 2007.

As another exemplary case, resource-constrained country like Taiwan, which spends about a quarter of South Korea's arms procurement budget, has already fielded three lower-end PAC-2 in 1997 and 2001 (later upgrade to PAC-3s), and placed four additional PAC-3s in 2009 (Missile Defense Advocacy Alliance 2018) to arm against China's continued advancements in nuclear and ballistic missiles. Israel, which enjoys "unprecedented"[6] level of "special" (Little 1993; Bard and Pipes 1997; Mearsheimer and Walt 2008) alliance ties with the US, even steering tacit support for its indigenous nuclear capabilities (Cohen 2010; Mattson 2016; Freilich 2013),[7] has also fielded multiple-layers of homegrown BMD assets to defend against frequent cross-border contingencies and regional asymmetric threats from Iran's Shahaab

[6] See statement issued by the American Israel Public Affairs Committee (AIPAC) on September 17, 2012 – e.g. "deepened America's support for Israel" and US-Israel security relations at "unprecedented levels."

[7] Israel's nuclear capabilities are estimated to about 80 nuclear warheads and up to 200 fissile materials, according to Arms Control Association (Davenport and Reif 2018).

missiles: David's Sling and Iron Dome for lower-tier, Arrow-2s in replacement of PAC-2s, and Arrow-3 working as equivalent upper-tier, exo-atmospheric role as the SM-3.

While the US's close allies under imminent asymmetric threats have spent on BMD even at the "expense of other capabilities" as in case of Taiwan (Thim and Liao 2017), South Korea's BMD acquisitions have remained stagnant. With delays in both South Korea's independent KAMD and deployment of BMD assets from the US, South Korea's autonomous BMD capabilities are, as of 2019, limited to the so-called 'non-hit-to-kill' PAC-2s, SM-2s, and some PAC-3 interceptors. For advanced BMD capabilities, South Korea rests on the upgraded PAC-3s under USFK, recently added Terminal High Altitude Area Defense (THAAD) in 2017, and SM-3 equipped aegis destroyers stationed outside of South Korean waters.

Alike in the case of the BMD, South Korea's autonomous armaments in the ISR have centered on the lower-end 'tactical' weapons systems including reconnaissance aircrafts and unmanned aerial vehicles (UAV) that provide limited detection range beyond the Demilitarized Zone (DMZ).[8] Plans to acquire advanced ISR assets including the military satellites and high-altitude UAV (HUAV) Global Hawk have been postponed repeatedly as South Korean government spat over the

[8] The 'Baekdu' (Hawker-800SIG) signals intelligence (SIGINT) aircraft, 'Kumkang' (Hawker-800RA) image intelligence (IMINT) aircraft, and the RF-16 IMINT (replacing the old fleets of RF-5As in operation since 1972; and RF-4Cs in operation since 1990), as exemplary have been limited to observing 100 kilometers range into North Korea beyond the Military Demarcation Line (MDL); RF-5As (in operation since 1972) and RF-4Cs (in operation since 1990) have been decommissioned completely in year 2007 and 2014, respectively.

budget.[9] Although South Korean government announced in August 2017 to resume its plans to field five military satellites to be operable by 2023 – the "425 Project" (Yonhap News 2017), the program has seen continuous delays. Given the situation, the limited detection range of existing fixed-wings has kept the US forces indispensable in garnering information and surveillance on North Korea's major nuclear and missile test sites, including Tongchang-ri (missile launch site), Punggye-ri (nuclear test site), Sinpo (Submarine-launched ballistic missile test-launch and submarine base), and the Pukchang Airfield (major launch sites of Hwasong-12 and -14 ballistic missiles) (Pinkston 2014). Without "cross-referencing to information collected by" the US's military satellites (Keyhole Satellites, Defense Support Program Satellites) and stationing of advanced reconnaissance aircrafts (U-2S stationed at Osan base, RC-7 at Pyeongtaek Humphreys), as well as the RC-135 reconnaissance aircraft stationed at Japanese Okinawa-Kadena air base, information collected from South Korea's existing ISR assets are allegedly "insignificant."[10] Kim Dae-young, former researcher of Korea Defense and Security Forum (KODEF), also noted that given North Korea's 200km-range of 300mm multiple-launch rocket systems (MRLS), not to mention other missiles, "it is difficult for South Korean army's ISR assets to detect [incoming targets] if deployed beyond 100km towards the [North Korean] inland" (Soon Jung-woo 2016).

[9] With repeated recalibrations since the 2000s, South Korea decided to purchase four Global Hawks from the US (under Foreign Military Sales Agreement) during Park Geun-hye administration. The first Global Hawk was finally delivered to South Korea on December 23, 2019.

[10] Anonymous military official. Interview by author, November 21, 2017.

Although Jang Cheol-wun[11] and Suh Jae-jung (2009) argued that advanced ISR assets such as military satellites and high-end reconnaissance aircrafts may be of "overkill" (Suh Jae-jung 2009: 117), given the small size of the Korean Peninsula and superiority over North Korea's ISR capabilities, such view can be again challenged as other smaller US allies and partners with in-depth information-sharing with the US have acquired advanced ISR assets of their own. Israel, as exemplary, despite about fifth (20,770 square kilometers) of South Korea's geographic size (99,720 square kilometers), population of 8.3 million (42.9 million people less than South Korea), and about half the size of South Korea's military expenditure, operates indigenously produced *Ofeq* military reconnaissance satellites – Ofeq-8, -10, -11 (Zorn 2008; Ben-Israel and Zvi 2005). Japan also operates its own military satellites – Information Gathering Satellites (IGS) – IGS-7A and IGS-Radar 4. Although formally designated as 'multipurpose satellites,' the IGS satellites closely monitor the military activities in the region including North Korea's nuclear and missile tests (Oros 2007: 30; Sawako 2009: 2). Israel and Japan have also equipped with multifarious autonomous ISR assets, including the reconnaissance aircrafts, independent nationwide network of ground-based radars as in case of Japan, and advanced indigenously produced radars and UAVs in case of Israel.

South Korea's relative restraint to shorter-range, lower-end defense articles, and also stagnant acquisition process is an intriguing 'complacency' for armaments,

[11] Interview with Jang Cheol-wun on January 17, 2019, professor at the Institute for Far Eastern Studies, Kyungnam University.

unseen from other US allies. While asymmetric threats have stimulated the US allies to strive for autonomous armaments in the BMD and ISR to the extent that their armaments function as 'useful redundancy' to the US's security provisions, why does South Korea remain relatively complacent in arming for autonomous defense capabilities?

Aside from the cross-national dimensions, South Korea's continuity in restraint in autonomous BMD and ISR capabilities is perplexing at the domestic, cross-regime dimensions. According to the predominant "conservative-progressive split" (Chae and Kim 2008)[12] in depicting South Korea's domestic political landscape, South Korea's restraint in armaments has been interpreted as the outcome of policy inconsistences. As South Korea went through two progressive administrations – Kim Dae-jung (1998-2003) and Roh Moo-hyun (2003-2008) government – to two conservative administrations – Lee Myung-bak (2008-2013) and Park Geun-hye (2013-2017) government – the divergent threat perception on North Korean threats and interests in enhancing South Korea's autonomous defense capabilities forestalled continuity in investments that are critical in procuring the costly state-of-the-art BMD and ISR capabilities. Veering against such depictions, however, this dissertation finds that the investments in the BMD and ISR sectors have been limited in both progressive and conservative regimes. The rigged investments in the BMD and ISR appear to be continuous phenomenon than change.

[12] See also, Snyder (2017); "sharp division" between progressives and conservatives on North Korea policy and alliance, according to Shin Gi-wook and Kristin C. Burke (2008: 287).

Indeed, as North Korea increased its asymmetric nuclear and ballistic missile tests since the mid-2000s, both progressive and conservative regimes have responded with coining new defense strategies, concepts, and pledges to enhance South Korea's effective countermeasures, including the state-of-the-art missile defense and ISR capabilities. In terms of operational concepts, since the 2000s, the progressive governments have announced to construct a 'Korean-style missile defense (MD),' soon developed to the concept of the Korean Air Missile Defense (KAMD), a lower-tier (B)MD system designed to trace and shoot down incoming targets from North Korea, including the ballistic missiles. Although the latter conservative regimes have been relatively more keen on deliberating on joining the US-led BMD initiatives and extending the range of capabilities to upper-tier, both progressive and conservative regimes have accumulated to strategic consensus on autonomous KAMD construction as countermeasure to North Korea's asymmetric threats. Following North Korea's second nuclear test in 2009 and heightened military provocations including the sinking of South Korean Cheonan vessel and shelling of Yeonpyeong Island in 2010, the conservative Lee Myung-bak regime also set out for Kill Chain, a preemptive strike system against Pyongyang's nuclear and missile facilities. Following unprecedented level of multiple nuclear tests and ballistic missiles tests under Kim Jong-un regime, the consecutive conservative Park Geun-hye administration further presented the Korea Massive Punishment and Retaliation (KMPR) plan, announcing its commitment to retaliate against any North Korean attack with force. Although power transferred back to progressive government under

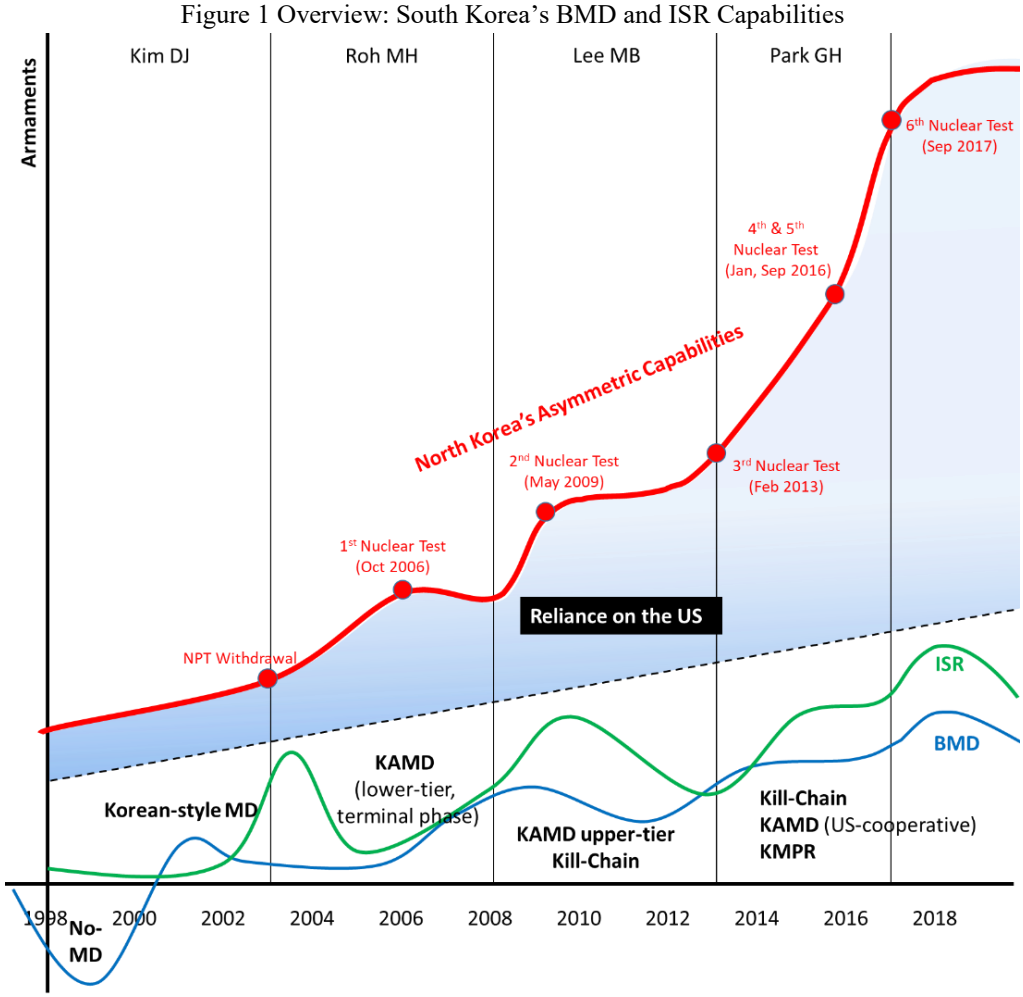
Moon Jae-in administration since 2017, President Moon pledged to continue the former government's construction of KAMD, preemptive Kill Chain, and KMPR at the outset of his term. Differently put, the three-pronged Kill Chain, KAMD, and KMPR have come to represent South Korea's development of autonomous measures in coping with North Korean threats, in addition to South Korea's traditional reliance on the US's extended nuclear deterrence and stationing of advanced weapons system (US Forces Korea).

Despite such transformations, however, what is most intriguing from the changes is that the actual progress in investment and procurement in the sectors has lagged behind in both progressive and conservative regimes, Figure 1. Although both BMD and ISR are highly interrelated and indispensable weapons system for South Korea's autonomous operation of the three-pronged defense system, closer observation of South Korea's armament choices across the regimes reveals that South Korea's arms build-up in the BMD and ISR has recurred with postponements in procurement and/or purchases of lower-cost and lower-end equipment. Armament priorities also went to alternative conventional offensive strike capabilities, such as missiles (Jang Cheol-wun 2015a; 2015b), fighter-jets, destroyers, artilleries, and armored vehicles.

All in all, South Korea's relative restraint to shorter-range, lower-end BMD and ISR defense articles, and also stagnant acquisition process are intriguing 'complacency' from both cross-national and cross-regime contexts, Figure 1. Despite North Korea's emergence as de facto nuclear power, what explains South Korea's

complacent reliance on the ROK-US alliance than autonomous armaments in the BMD and ISR capabilities? While South Korea has not been without incremental arms build-up in the autonomous BMD and ISR capabilities, why does South Korea continue to be restrained to lower-end equipment in comparison to other US allies? Despite regime changes, what explains the continuity in restraint in both progressive and conservative administrations?

Figure 1 Overview: South Korea's BMD and ISR Capabilities



Source: Illustrated by author.

2. Existing Explanations and their Limits

South Korea's restrained armaments or alliance-reliant defense posture has been widely addressed topic in multifarious researches, including the studies on asymmetric alliance (weak state, patron-client relations), alliance dilemma, arms procurement and military strategies (of late defense-industrializing state or second-tier arms producer). Yet, as the existing literatures have inclined to focus on the distinctive origin and attributes of the ROK-US bilateral alliance, the previous studies have lended little room for comprehensive comparative analysis on South Korea's arms acquisition patterns.

Namely, at the foremost, the existing literatures have treated the BMD and ISR as either separate or within comprehensive discussions on South Korea's defense system, without clear recognition on the highly interrelated nature of the BMD and ISR weapons system as deterrence against asymmetric nuclear and ballistic missiles. Also, although Victor Cha (2002), Yoon Duk-min and Park Cheol Hee (2007), Park Hwee-rhak (2013; 2016a), and others (Kim Sun-Tae 2008; Murata 1995) have juxtaposed South Korea to the case of Japan; to Israel (Kim Juri 2018; Park Hwee-rhak 2016e); and to Taiwan and other Asian allies of the US (Khalilzad et al. 2001; Park Jae Jeok 2011; Wortzel 2000; Mishra 2016; Bush 2016; Armacost 2004); the discussions on arms acquisition patterns have partaken a portion of larger debate on comparing their overall bilateral alliance structure and relations with the US per se.

Nonetheless, gathering from the existing literatures, four major perspectives

can be drawn to constructing an understanding on South Korea's arms acquisition patterns in the BMD and ISR capabilities. First is rationalist approach, which portrays South Korea's armaments as rational actors' calculation of allying and arming for capability aggregation. Second is structuralist approach, that the resilient capability gap in terms of defense budget, military technologies, as well as power asymmetry between South Korea and the US stifle South Korea's autonomous armaments. Third, institutionalists and constructivists have placed emphasis on enhanced symmetry in the ROK-US relations – that the resilience of South Korea's US-reliant arms acquisition pattern is neither rational nor structural outcome, but certain institutions, norms and values formed within that are reinforcing the status-quo than change. Fourth is the military-industrial complex or corruption studies that tend to refute other approaches and argue that South Korea's arming is distorted outcome of vested interests of few.

1) Rationalist Strand: Restraint as the 'Rational-choice' and 'Economic Pragmatism' for Power-maximization

Under the rationalist strand, South Korea's restrained arms acquisition in the BMD and ISR would be the outcome of rational calculation of benefits and costs for power-maximization.

In application of the so-called "autonomy-security tradeoff model" put forth by Michael F. Altfeld (1994) and James D. Morrow (1993), Park Hwee-rhak (2016a)

and others have argued that it is South Korea's distinctive rationality to maintain the alliance-reliant defense system.[13] Unblackboxing the states into domestic agents and their preferences, the model placed emphasis on how states' arming and allying are not a question of 'either-or' but varying "combination" of the two depending on the context and calculation of "political costs" and "benefits" of the options (Morrow 1993: 231). The model provided the means to observe the incentives behind South Korea's continued reliance on the alliance and reinforcing of the combined defense system than arms build-up. Although South Korea's continued reliance on the alliance and reinforcing of the combined defense system would inevitably increase the traditional security dilemma (Snyder 1984) embedded in alliances (fear of entrapment and abandonment) and tradeoff in its autonomy (Leeds and Morgan 2010: 140), also limiting opportunities for arms build-up of its own (Katz 1984: 9; Krause 1992: 190; Bitzinger 2003: 35), the ROK-US combined defense system provides critical security benefits in return. Forged upon the US's commitment in South Korea's defense (Mutual Defense Agreement, MDA), military presence (Status of Forces Agreement, SOFA), provision of nuclear umbrella, and institutionalization of Combined Forces Command (CFC) including the Operational Control (OPCON) structure, these arrangements have been what Morrow (1993: 216) would call "the most efficient response" against adjacent North Korean threat. Park Hwee-rhak (2016c: 309), as one of the most explicit advocate of South Korea's autonomy-

[13] Although not focused on the autonomy-security tradeoff model, advocates of similar perspective, see Han Yong-sup and Jeong Sang-hyuk (2015) and Song Dae-sung (2009).

security tradeoff, has also outwardly stated that given North Korea's emergence as de facto nuclear power and absolute dearth in South Korea's autonomous countermeasures, South Korea may need to further "prioritize enhancing ROK-US combined forces than enhancing ROK's autonomous military capabilities."

The explanation, however, largely mutes variations in South Korean administrations' efforts in arms acquisitions. Although South Korea remains continuously limited in autonomous defense capabilities in BMD and ISR, the post-Cold War security environment, North Korea's transition to asymmetric capabilities, and increasing divergence in North Korea perception within South Korea have ensued with diverse efforts to adjust its autonomous defense capabilities. Upon Roh Moo-hyun administration's drive to bring back wartime OPCON in the 2000s, for instance, South Korea has allocated large bulks of arms spending to acquire the advanced ISR weapons such as Global Hawk to enhance South Korea's autonomous ISR capabilities. Also, the latter conservative Lee Myung-bak and Park Geun-hye administrations, in principle, demanded purchases and indigenous production of strategic assets for South Korean military including mid-to-upper-tier medium-range surface-to-air missile (M-SAM), long-range surface-to-air missile (L-SAM), and Global Hawk to establish the KAMD, Kill Chain, and KMPR as South Korea's three-pronged deterrence strategy against North Korea's asymmetric capabilities.

Indeed, increasing number of former advocates of autonomy-security tradeoff have called for revisions in the equation, placing emphasis on South Korea's need to revamp its autonomous defense capabilities, while simultaneously

strengthening the ROK-US combined defense system. Park Min-hyoung and Chun Kwang-ho (2015: 47-54), for instance, called for an alternative model, in which both realms of autonomy and security can be enhanced simultaneously than traded-off – "autonomy-security simultaneous promotion model." Likewise, Moon Seong-mook (2013) argued for concurrent efforts to enhance autonomy of South Korean military and strengthen the existing ROK-US combined forces structure. South Korea's arming cannot be confined to the rational, cost-benefit outcome of state's pursuit for the 'most efficient response to the threat' and capability maximization.

More importantly, the major limitation of rationalist explanations lies in the dyadic nature of the literatures. Delving into monographic studies on the ROK-US alliance, these studies omit comparative look into how and why the 'tradeoffs' vary among other bilateral allies of the US. As observed above, Japan has strived to acquire its own arms in missile defense and ISR capabilities despite the US's military presence and close alliance ties. Likewise, Israel acquired multiple layers of indigenously produced arms including nuclear capability, regardless of the US's tacit but exceptional commitment in defense of Israel in the region. The close allies of the US have tended to arm their militaries including the state-of-the-art missile defense and ISR sectors, as much as to the point that the US's military presence and/or provision of extended deterrence function as, what Morrow (1993: 213) would term "additional security" to their defense. In contrast, South Korea despite North Korea's increasing asymmetric nuclear and missile threats across the border not only remained restrained in arming, wherein its own armaments worked as ancillary to the

US-stationed weapons, but also appeared to be hesitant in allying as well, as seen in South Korea's reluctance in joining the US-led regional BMD architecture with the so-called 'No MD policy.' South Korea's combination of alliance and armament did not necessarily add up to additional security nor the most efficient cost-benefit response to the threat stipulated by the rationalist autonomy-security tradeoff thesis.

Interrelated, "economic pragmatism" has been another widely accepted rationalist explanation for South Korea's restraint in arms acquisition. According to Kim Tae-hyo, former Senior Presidential Secretary for the National Security Strategy Office of President Lee Myung-bak (February 2008-July 2012), the main reason why the Lee administration postponed the purchase of advanced ISR asset, Global Hawk, was based on the consideration for extravagant costs. With assumption that the US will deploy these assets in contingencies, the government tried to bargain for better deals than immediate acquisitions.[14] Earlier on in 2001, Hamm Taik-young pointed out that South Korea's plans for ISR aircrafts, BMD, and other advanced acquisitions will be inefficient and "redundant to US assets," that are also "not essential nor urgent" (2001: 145), considering South Korea's geopolitical conditions (Hamm Taik-young 2003a: 113). Jang Cheol-wun also implied his position that given the size of the Korean Peninsula, advanced ISR assets may become inefficient redundancy to the US provided capabilities under the ROK-US combined defense system.[15] Studies by

[14] Interview with Kim Tae-hyo, professor at Sungkyunkwan University, former Senior Presidential Secretary for the National Security Strategy Office of President Lee Myung-bak (closest aide and architect of President Lee Myung-bak overall foreign policy) on January 16, 2019.

[15] Interview with Jang Cheol-wun on January 17, 2019, professor at the Institute for Far Eastern Studies, Kyungnam University.

Lee Misook (2017), Hong Kyudok (2009), Noh Hoon (2012), and Lim Yong-hwan (2018), to list more, have addressed how South Korea's budget constraints and financial crises have been critical in limiting South Korea's arms acquisitions. As Japan has 'buck-passed' parts of its security to the US-Japan alliance while focusing on its economic development in the twentieth century (Lind 2004), it is rational for South Korea to buck-pass the acquisition of advanced and expensive realms of security to reliance on the alliance (Heo and Roehrig 2018; Kang 2006; Kim Jaechun 2015), while working on economic growth, political liberalization, and also arming in other conventional capabilities in the post-Cold War era (Lee Chung Min 2000; Park Sun Song 2015; Lee Dong Sun 2007).

Although economic considerations continue to be critical variable for South Korea's arms acquisitions, the argument for economic-pragmatism remains insufficient for the following grounds. First, economic factors are less static than assumed. Depending on the domestic political process, in which threat, security, and economic constraints become differently connoted, 'economic-pragmatism' can vary temporally and spatially across different agents, regimes, and states. Namely, Taiwan's purchase of PAC-3s is exemplary case. With about a quarter of South Korea's defense spending, Taiwan prioritized the weapons "at the expense of other capabilities" (Thim and Liao 2017), primarily to arm against China's continued advancements in nuclear and ballistic missiles. Economic constraints have varied across regimes, as for instance Roh Moo-hyun administration's take on the Global Hawk. Unlike Lee Myung-bak administration's decision to postpone the acquisition,

Roh administration pushed for Global Hawk despite limited budget as South Korea recovered from 1997 Asian Financial Crisis.

Second, economic-pragmatism or strategic buck-passing view can be challenged when we come down to the empirical discussions on South Korea's contributions to the ROK-US defense burden sharing. Since 1991, the ROK-US has regularly convened for the Special Measures Agreement (SMA) under Status of Forces Agreement (SOFA), which decided the amount of costs covered by South Korea to support the US's military presence on the South Korean soil. Offsetting about half of the costs of the USFK since 1991, South Korea has been sharing the "labor cost," spending on interoperable arms under "Combined Defense Improvement Program (CDIP)," base construction costs ("Republic of South Korea Funded Construction, ROKFC"), and other "logistics cost" of the USFK (Paek Jae-ok 2017). As exemplary in the case of THAAD, according to statement by General Vincent K. Brooks, Commander of UN Command and ROK-US CFC, on April 27, 2017, the budget provided for USFK activities by South Korea will be "shift[ed] towards… THAAD site improvements."[16] South Korean Ministry of National Defense confirmed several times, that the lump sum can be in principle directed for the payment in building and deployment of the THAAD, and construction of other related infrastructures.[17] Differently put, the US's deployment of advanced

[16] Statement of General Vincent K. Brooks Commander, United Nations Command; Testimony before the Senate Armed Services Committee, on April 27, 2017.

[17] Then Defense Minister Han Min-koo, during National Assembly Special Committee hearing on National Budget on July 13, 2016.; again reconfirmed by announcement by Ministry of National Defense on April 13, 2018.

equipment has not been a free-lunch for the South Korean side, Table 1. According to former US Ambassador Mark Lippert, South Korea has been covering above 53.6 percent of USFK's total non-personnel costs, Table 2 (The Strait Times 2017).

Table 1 South Korea's Defense Burden Sharing (2002-2018), in 100 million won

Year	Labor Cost	Base Constructions*	CDIP**	Logistics Cost	Total
2002	2,792 (46.7%)	1,398 (24.3%)	604 (12.4%)	574 (16.6%)	6,132
2003	3,015 (46.2%)	1,627 (27.5%)	667 (11.2%)	603 (15.1%)	6,686
2004	3,241 (46.4%)	1,944 (31%)	765 (8.4%)	651 (14.2%)	7,469
2005	2,874 (46.4%)	2,494 (31%)	430 (8.4%)	1,006 (14.2%)	6,804
2006	2,829 (42.2%)	2,646 (36.7%)	394 (6.3%)	935 (14.8%)	6,804
2007	2,954 (40.7%)	2,976 (41%)	0	1,325 (18.3%)	7,255
2008	3,158 (42.6%)	2,642 (35.6%)	0	1,615 (21.8%)	7,415
Year	**Labor Cost**	**Base Constructions***		**Logistics Cost**	**Total**
2009	3,221 (42.4%)	2,922 (38.4%)		1,457 (19.2%)	7,600
2010	3,320 (42%)	3,158 (40%)		1,426 (18%)	7,904
2011	3,386 (41.7%)	3,333 (41%)		1,406 (17.3%)	8,125
2012	3,367 (40.3%)	3,702 (44.3%)		1,302 (15.6%)	8,361
2013	3,340 (38.4%)	3,850 (44.3%)		1,505 (17.3%)	8,695
2014	3,430 (37.3%)	4,110 (44.7%)		1,660 (18%)	9,200
2015	3,490 (37.4%)	4,148 (44.5%)		1,682 (18%)	9,320
2016	3,630 (38.4%)	4,220 (44.7%)		1,591 (16.9%)	9,441
2017	3,655 (38.4%)	4,250 (44.7%)		1,602 (16.9%)	9,507
2018	3,710 (38.6%)	4,442 (46.3%)		1,450 (15.1%)	9,602

Source: Ministry of Defense; Paek, Jae-ok (2017).
Note: *Official term is "Republic of South Korea Funded Construction"; **from 1991-2009, Combined Defense Improvement Program (CDIP) has been fourth item for South Korea's defense burden sharing under the Special Measures Agreement (SMA). Since 2009, CDIP has been incorporated under base construction

category of the budget.

Table 2 ROK-US Defense Burden Sharing, in US$ bil

	2000	2001	2002	2007
Total Non-personal Stationing Cost (NPSC)	1.9	2.07	2.11	2.8
ROK Burden	1.19 (62.6%)	1.12 (54.1%)	1.19 (56.3%)	1.5 (53.6%)

Source: Ministry of Foreign Affairs, Ministry of Defense, US Ministry of Defense "Report on Allied Contribution to Common Defense" series.

More striking comparison can be seen from how Israel's own arms build-up has been exceptionally 'funded' by the US. The US has provided Israel with special economic and military aid packages for Middle East stabilization throughout the post-Cold War era. Beginning with the first ten-year Memorandum of Understanding (MOU) for FY1999-2008, the so-called "Glide Path Agreement" during the Clinton administration, a total of $21.3 billion was provided to Israel for military aid, about $2.1 billion per year.[18] In 2007, the Bush administration also came down to the current ongoing thirty billion US dollars military aid package for ten years (FY2009-2018). As for the terms of agreement, Israel has been permitted to spend up to 26.3% of the aid on the US-Israeli joint development and production of arms.[19] The most

[18] See, Joint Statement by President Clinton and Prime Minister Ehud Barak, July 19, 1999. According to the statement, "The United States and Israel will sign a Memorandum of Understanding (MOU) which will express their joint intention to restructure U.S. bilateral assistance to Israel. The MOU will state the United States' intention to sustain its annual military assistance to Israel, and incrementally increase its level by one-third over the next decade to a level of $2.4 billion subject to Congressional consultations and approval. At the same time, the MOU will provide for a gradual phase-out of U.S. economic aid to Israel, over a comparable period, as the Israeli economy grows more robust, less dependent on foreign aid, and more integrated in world markets."

[19] Memorandum of Understanding between the United States and Israel, August 16, 2007, signed by then US Under Secretary of State R. Nicholas Burns and Israeli Ministry of Foreign Affairs Director General Aaron

recent ten-year MOU, signed on September 14, 2016, has earmarked a total of thirty-eight billion US dollars for FY2019 to FY2028,[20] which includes the US's provision of thirty-three US billion dollars of grants in Israel's arms purchases from the US (the Foreign Military Financing grants, FMF) as well as additional five billion US dollars explicitly for procuring missile defense programs such as the Iron Dome and Arrow Systems (Sharp 2018: 5). South Korea, in other words, appears far more 'buck-bearing' than buck-passing when juxtaposed to the US allies like Israel.

Third, this dissertation finds that emphasis on South Korea's budget constraints often underestimates the bulk of South Korea's defense spending. Particularly when placed in comparative context, South Korea emerged as the top tenth global military spender as of 2018, with $43.1 billion, consecutive to UK (seventh largest with $50 billion), Germany (eighth with $49.5 billion), and Japan (ninth with $46.6 billion). Countries like Israel with multiple-layers of missile defense systems spent far less than South Korea, ranking as the seventeenth spender ($15.9 billion) on defense in 2018 (SIPRI 2018: 2). In terms of accumulative sum of military expenditure from 1990 to 2018, South Korea ranked the eleventh largest spender with a total of $746.1 billion, exceeding the amount spent by other US allies such as Australia ($509 billion), Israel ($425.5 billion), and Taiwan ($300.5 billion). Looking into smaller timeframe of 2000-2017, South Korea again recorded the eleventh largest military spender with sum of $563 billion, Table 3, after UK ($975

Abramovich.

[20] Memorandum of Understanding between the United States and Israel, September 14, 2016.

billion, fifth), Japan ($873 billion, sixth), and Germany ($779 billion, ninth), allocating about approximately twice as much as Israel ($293 billion) and thrice as much as Taiwan ($182.4 billion) since 2000 to 2018.[21]

Table 3 Military Expenditures (1990-2018), in US$ bil

Rank	**Country**	**1990-2018** (US$ bil)	**Rank**	**Country**	**2000-2018** (US$ bil)	**Rank**	**Country**	**2018** (US$ bil)
1	USA	16,371	1	USA	11,755	1	USA	649
2	China	2,771	2	China	2,501	2	China	250
3	France	1,579	3	France	1,033	3	Saudi Arabia	67.6
4	UK	1,442	4	Saudi Arabia	1,027	4	India	66.5
5	Japan	1,314	5	UK	975	5	France	63.8
6	Saudi Arabia	1,291	6	Japan	873	6	Russia	61.4
7	Germany	1,260	7	India	824	7	UK	50
8	India	1,025	8	Russia	811	8	Germany	49.5
9	Russia	1,016	9	Germany	779	9	Japan	46.6
10	Italy	913.4	10	Italy	608	10	ROK	43.1
11	ROK	746.1	11	ROK	563	11	Italy	28.4

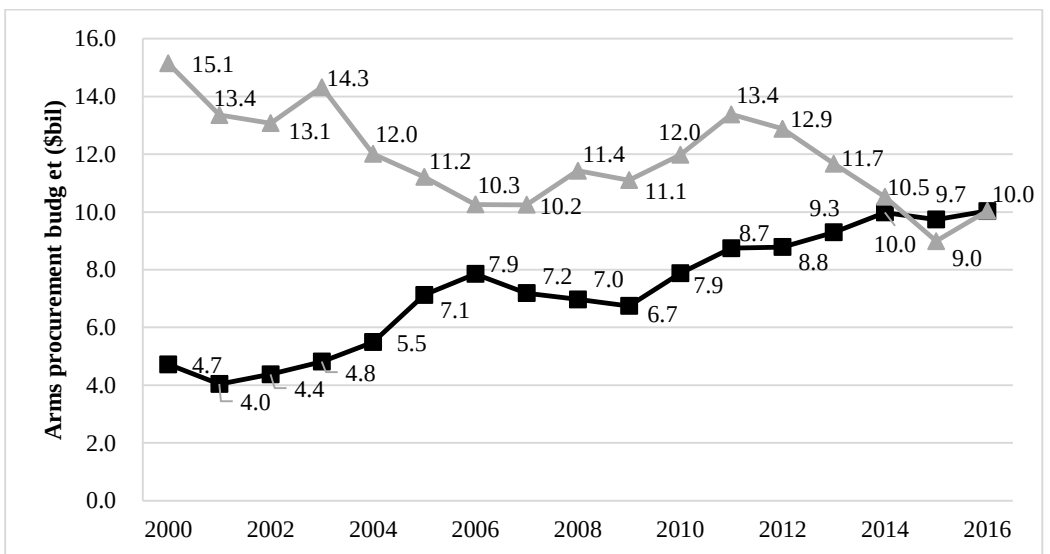
Source: SIPRI Military Expenditure Database
Note: in constant (2016) $USD.

In terms of arms procurement budget, that excludes the expenses on military personnel and other maintenance and operating costs of the military, South Korea's

[21] SIPRI Military Expenditure database.

force improvement budget (FIB) came to exceed that of even Japan's since 2015, as seen in Figure 2. South Korea set 11.6 trillion won, twenty percent more than Japan's 9.3 trillion won (8,714 million yen) in arming (Chang Won-jun et al. 2018: 23). In 2017, South Korea secured $11.7 billion for arms procurement, while Japan ($7.9 billion), Taiwan ($2.9 billion), and Israel (at least $3.3 billion)[22] afforded smaller procurement budgets. Given such bulks in South Korea's arms spending, the existing explanation on South Korea's budget constraints remains inadequate in explaining why South Korea would be more inclined to 'buck-pass' by relying on the weapons stationed by the US than acquiring autonomous sets of weapons.

Figure 2 South Korea and Japan's Arms Procurement (Force Improvement Budget), in US$ bil



Source: For South Korea, Ministry of National Defense, Defense White Paper, annual series.; For Japan, Ministry of Defense, *Defense Programs and Budget of Japan*, annual series, reorganized by the author.
Note: Converted by annual exchange rates, OECD Database.

[22] US's aid constitutes about twenty percent of Israel's defense budget and "almost the entire procurement budget," see Freilich, C (2017), Freilich, CD (2013; 2018a; 2018b).

2) Structuralist Explanation: Restraint by Resilient Power Asymmetry

Interrelated, another predominant strand of explanation has centered on South Korea's structural constraints, placing emphasis on how the resilient capability gap in terms of defense budget and military technologies, as well as the power asymmetry in the ROK-US relations, have restrained South Korea's armaments.

Dating back to literatures in the 1980s, given the huge asymmetry in security, economy, and technological capacity, Baek Kwang-il and Moon Chung-in (1989: 137) found it inevitable for South Korea to be "inherently dependent upon and subject to" the influence of the US in its arms acquisitions.[23] The US's arms supply and transfer of technologies to South Korea were in many occasions limited to "non-leading edge, on the verge of being outdated, or at least older" (US General Accounting Office 1984: 13; US Department of Commerce Bureau of Industry and Security 2007: 4-16; Wessner 1999: 35), or "granted on the condition that South Korea acquiesces to US foreign policy objectives" and abandon "the development of certain weapon systems" (Hwang Jin Hwoan 1995: 16) at home to prevent any competition to US's defense industry at home (Baek and Moon 1989; Kim Tae Woo 1995; Hamm Taik-young 2003a). As Kim Tae-hyung (2010: 519) deliberated on how South Korea's advancements in space technologies have been barred from limited access to the US's space-related technologies, the structural forces seem to continue to determine

[23] See also, Moon Chung-in and Baek Kwang-il (1985); Park Sun Song (2015); Hamm Taik-young (2003b); Kim Jong Ryul (2013).

South Korea's armaments in the state-of-the-art BMD and ISR capabilities. Despite South Korea's emergence as the fourth and eleventh largest economy in Asia and the World by 2017, as Lee Yong-dae, former Deputy Minister of Office of Military Force and Resources Management, Ministry of National Defense, also stated, the main reason why South Korea lacks any competitive ISR capabilities has been due to the US's resilient export control – US's refusal to sell requested weapons to South Korea.[24]

While this study concurs with how structural forces continue to be critical variable to South Korea's restrained armaments, particularly in the state-of-the-art weapons system, the existing theoretical and empirical dearth of comprehensive studies on South Korea's BMD and ISR capabilities demand clarifications on two grounds. First, in cross-national context, how and why have such structural constraints and US's export control per se have different influence on the US allies? As Loch Johnson (2008: 64) wrote how the US dominates the military realms with "the largest and most expensive intelligence apparatus in the world, indeed in the history of humankind," the US's structural influence from the absolute gap in capabilities and technological superiority has been pervasive, not only to countries like South Korea. Despite the US's monopoly and hegemony in the arms market, however, more resource-constrained US allies have nonetheless invested and purchased high-tech weapons systems as seen in the case of Israel and Taiwan

[24] Interview on January 11, 2019. Currently professor in department of defense acquisition program at Kwangwoon University, retired Army Major General; former Deputy Minister of Office of Military Force and Resources Management, Ministry of National Defense, Republic of Korea, from August 2012-January 2015.

discussed above.

Second, to what extent are such structural forces constant? An intriguing empirical case is again the Global Hawk. Although South Korea's initial request to purchase the Global Hawk during Roh Moo-hyun administration has been denied, the US agreed to sell the Global Hawk in the following Lee Myung-bak regime. South Korea became the first US ally to be granted the sale of the model.[25] Nevertheless, the acquisition has been put-off, not because of the US's export control but the Lee administration's strategic decision to bargain for better deal. The "principle of pragmatism" has been important portion of the decision than outright structuralist determination, through which South Korea sought to enhance its efficiency in both arms spending and allying.[26] Park Geun-hye administration ultimately came down with the US for final contract in 2014. Yet, the US recently announced that it will delay the delivery of two Global Hawks, which were supposed to be handed over by latter half of 2018, allegedly to 'beef-up' the anti-hacking system. Structural constraints have seen ebb and flow over time.

To further clarify, this study's take on structural constraints echoes Choi Jong-kun and Pyo Seung-jin(2013)'s comparative analysis on fighter-jet acquisition patterns of South Korea and Japan. While it is true that more "mutual" and "interdependent" relations between the US and Japan have been the key to the US's

[25] Interview with Yu Yong-Weon on February 1, 2019, editorial writer and military specialist at the *Chosun Daily,* and chief of Planning and Coordination Department of Korea Defense and Security Forum (KODEF).

[26] Interview with Kim Tae-hyo, professor at Sungkyunkwan University, former Senior Presidential Secretary for the National Security Strategy Office of President Lee Myung-bak (known as closest aide and architect of President Lee Myung-bak overall foreign policy) on January 16, 2019.

tendency to grant state-of-the-art sales in fighter-jets, also with "mutually beneficial" technology deals, as stated by Hyun In-taek and Dennis P. Patterson (1991: 92-97), Choi and Pyo's work has lended more emphasis on the importance of "interaction" between the policies of supplier and recipient states. Although the higher asymmetry in the ROK-US relations would make South Korea more vulnerable to hegemonic ally's one-way or trickle-down transfer of the deals, the state's arms acquisition pattern is also determined, *however limited*, in reflection of the recipient's approach to arms acquisition. The article by Park Hwee-rhak (2018) also compared Japan's "cooperative" and South Korea's "self-reliant" approach to the US's BMD as the explanatory factor for the two allies' divergence in BMD capabilities. Rather than outright structural determination, convergence or divergence between the two states also matters, wherein the actors (recipient/weaker state in the relations) can be less of passive agents under given structures.

3) Institutional and Constructivist Explanation: Restraint from the ROK-US Combined Defense System and Norms

In dispute against both rationalist and structuralist strands of explanations, institutionalists and constructivists have argued that the varying arms acquisition patterns are of endogenous-making. With emphasis on South Korea's economic growth and relative technological catch-up with considerable arms spending, they argued that the resilience of South Korea's alliance-reliant arms acquisition pattern is neither rational nor structural outcome, but the 'stickiness' of institutions and norms formed within the ROK-US alliance that prolong and reinforce the existing parameters of South Korea's arms choices under the ROK-US alliance.

Suh Jae-jung (2007), in reference to Robert O. Keohane's institutionalist thesis, *After Hegemony* (1984), argued that the incentive structure and hierarchy created since the forging of the ROK-US alliance have resulted in path-dependence, the so-called "alliance asset specificities," which would make alterations or termination of the alliance costly and "produce tendencies and pressures to prolong" the existing alliance structure despite changes in power distributions between these allies.[27] Lee Misook's study on South Korea's defense acquisition policy from 1988-2003 may be also relevant here. In observation of South Korea's inherent US-reliant military strategy, which came with the US's focus on military support in air and

[27] Suh Jae-jung (2007: 63-64): "Alliance asset specificity refers to durable investments that are undertaken to complete alliance commitments and that would incur higher opportunity cost than best alternative uses or alternative users if the original alliance should be terminated."

maritime, Lee Misook (2017) conveyed how South Korea has been less incentivized to seek all-round arms build-up. Despite South Korea's relative improvements in its capabilities, the existing shape of the force structure and military strategy have reinforced South Korea's limited priority in advanced weapons system including asymmetric capabilities.

Chang Noh-soon's thesis directly challenged studies that applied Morrow's autonomy-security tradeoff model. Unlike how Morrow tacitly suggests for more or less mutual transactions in the autonomy-security tradeoff, that the traded-off autonomy will be returned by commensurate security from the alliance, Chang (1996) contended that this has not been the case for South Korea. For South Korea, security guaranteed from the alliance has not incurred in proportion, placing South Korea's choices between alliance and armaments bounded to the decisions and strategies of their hegemonic ally, the US. Considering South Korea's enhanced capabilities in the post-Cold War era, Chang saw South Korea's limitations in arming neither the rational nor structural outcome, but a manifestation of path-dependent and exploitative relations reinforced by both at home and hegemonic US.

Although such institutionalist approach to the phenomenon has provided empirical depth to understanding the 'internal settings' of the ROK-US alliance and their influence on South Korea's arms acquisition patterns, the explanations remain limited for the following grounds. At the foremost, other US allies have been under their own institutional and/or normative constraints alike, as observable in the case of Japan. Ranging from the self-imposed one percent GNP ceiling on defense spending,

ban on arms exports (1967 Three Principles of Arms Exports, TPAE), and its Peace Constitution (Article 9) that restricted Japan's right to collective self-defense and arms build-up in offensive military capabilities, Japan has been placed under institutional and legal pressure at home and abroad to limit their armaments under the confines of 'self-defense.' However, as Gerald Curtis (1993), Kent Calder (1988), and Keiko Hirata (2001) have posited that such passivity in armaments has been of Japan's "state strategy" than what Thomas U. Berger (1993; 1998) contended as Japan's "anti-militarist culture," actors should be perceived as active agents, capable of "coping" against existing constraints (Curtis 1993). Although Japan has been reluctant for extra-territorial in the postwar years, preferring to focus on economic growth, Japan's rise as economic power and increasing military threats in the region have brought the policy leaders to seek incremental changes to expand Japan's regional security role and scope of armaments of their Self-Defense Forces since the 1990s (Park Cheol Hee 2014; Park Young-june 2014; Akimoto 2018; Arase 2007; Easley 2016; Kitaoka 2014). As Japan's arms build-up preceded with revision of the above institutional, legal, and/or normative constraints, including the replacement of the TPAE and reinterpretation of the constitution to allow the right to collective self-defense, it remains a puzzle why the institutional and/or normative effects of the ROK-US combined defense system appear to be more resilient in the case of South Korea.

Second, the endogenous-take of the explanation also remains limited in detaching from determinism embedded in the structuralist thesis. With the tendency

to conceptualize the alliance-related institutions and norms as a kind of 'substructure,' the actors again become bounded to path-dependent influence of the existing settings. Yet, as previous critique on structuralists pointed out, armament decisions of the states do not always remain confined to existing 'settings' but can vary, *although limited*, along the agents' considerations for other goals and preferences than capability aggregation. More importantly, unlike what the term 'combined defense system' may have alluded to, the division of labor between South Korean military and USFK has not guaranteed seamless combined operation, often excluding for instance transfer of sensitive military information acquired from the US's advanced ISR capabilities. Explanations remain limited as for why South Korea remains complacent to such institutional effects on capability aggregation.

While existing studies have deliberated on the constructive workings of identities and values of the ROK-US alliance embedded in South Korea's alliance-reliant defense posture against North Korea (Chun Chae-sung 2004; Namgung Gon 2000; Lee Geun and Chun Chae-sung 2001; Kim Ki-Jung 2008; Suh Jae-jung 2007), the emphasis on the normative realms cannot account for how previous alliance norms have become much in 'flux' in the post-Cold War era. With the emergence of first progressive regimes in the South Korean government under Kim Dae-jung (1998-2003) and Roh Moo-hyun (2003-2008) administrations, more diverse security perceptions on North Korea and voices for greater autonomy in the ROK-US alliance have come to the fore of domestic politics in South Korea. Although extreme anti-Americanism remains distant from the majority view, the increasingly vocal and

networked NGOs and public have come to persist and call for even withdrawal of the US forces and termination of the alliance at the one end of the extreme. Also, the ROK-US alliance has been put to significant test and readjustments in the 2000s as inauguration of progressive regimes in South Korea increased the wedge between how Seoul and Washington viewed the nature of the North Korean threat and corresponding strategies (Kim Chung Min 2003). The US's turn to focus on global war on terrorism under President George W. Bush since the 9/11 also ensued with the Global Posture Review (GPR) in 2004, pressing for force reduction of the USFK and overall adjustments in the ROK-US alliance. When the power transitioned back to conservative regime under Lee Myung-bak administration (2008-2013), South Korean government pushed for building "comprehensive ROK-US alliance" as means to "restore" the ROK-US alliance, extending the scope of the alliance from security interests against North Korea to partnership based on shared values of "democracy and the market economy" (Kim Sung-han 2009).

Considering how the post-Cold War could be defined as both South Korea and the US's search for a "new raison d'être" of their bilateral alliance, as Kim Jaechun (2015: 34) put, vacillating to the extent of "a marriage closer to a divorce" in mid-2000s to again "linchpin" of the US's Asia Policy in the 2010s according to one former US diplomat (Kim Jaechun 2015), alliance norms of the past have been more "pliable" (Cho Seong Ryoul 2009) – in flux of changes – than idle enough to cause path-dependent effects on how South Korea seeks its armaments.

4) Military-industrial Complex: Restrained by Vested Interests of a Few

Last but not least is the thesis on military-industrial complex. In an enclosed oligopolistic, if not monopolistic nature of defense industry where the invisible hand of free market remains absent (Gansler 1980), Jeong Wook-sik, Kim Jong-dae, and others have elaborated on how South Korea's arming has been rampant with corruption. It is neither South Korea's efforts for the most efficient form of security, nor the struggles to escape from the path-dependent structural constraints as a non-major power and late defense-industrializing state, but rent-seeking and irrational decisions of key executives (Bae Young-Il 2012), militaries (Sohn Ho-Chul 1987; Bae Young-Il 2012), and defense industries (Suh Jae-jung 2009: 105), especially those of the US's defense industries (Hamm Taik-young 1998: 338), that maneuver the decisions in arming (Chung Sang Hwa 1993). South Korea's fighter-jet acquisitions, one of the most consistent and regular big-ticket items South Korea procured from the US, were most extensively discussed in the corruption and bribery literatures (Kim Chul Hwan 2000; Suh Jae-jung 2009; Moon Kyu Hyeon 2003).

Critics on missile defense systems have been particularly pronounced in their contentions that South Korea's investments in missile defense assets are in foundation driven by the military-industrial complex forged between South Korean military and the US's defense industries. Theodore A. Postol, Emeritus Professor at Massachusetts Institute of Technology (MIT), has been highly critical of the interceptive technologies of Patriot missile defense systems and THAAD, that the

US's defense industries, in collusion with the US government and the counterparts in the allied countries, are generating the "myth" of missile defense. Postol argued that in real contingencies, the probability of the missile defense system is as low as "hitting an incoming bullet with another."[28] In similar context, Jeong Wook-sik (2015a; 2015b; 2017) and Kim Jong-dae of the progressive Justice Party, both longtime experts and civil activists in unveiling military affairs of South Korea, argued that South Korea has been 'squandering' the defense budget by selling the "myth" of interceptive technologies for private interests of a few (Kim Jong-dae and Jeong Wook-sik 2014).

While this dissertation does not seek to repute the irrational realms of armament decisions as deliberated by the literatures on military-industrial complex and corruption, the explanations remain inadequate on the following grounds. First, given the non-market nature of all arms transactions, monographic explanation on South Korea's case of military-industrial complex overlooks the covert deals and collusions rampant in arms transactions between the US and its other allies (Hartung 2001; Hirose 1989). Also, while narrow self-interests of few may distort South Korea's armaments, covert transactions have been the essence of how countries like Israel became, as Yaakov Katz and Amir Bohbot (2017) put, the "Weapon Wizards," capable of producing both advanced asymmetric and conventional military capabilities at home. Second, although much has been debated on the actual

[28] Interview with Theodore A. Postol, Emeritus Professor of Science, Technology, and National Security Policy, Massachusetts Institute of Technology, October 3, 2016.

effectiveness of national missile defense system, not only South Korea but other advanced countries around the globe have transitioned to missile defense as their indispensable deterrence measure against asymmetric nuclear and missile threats. Especially when the states' military capabilities are less credible, studies have found that regardless of the performance of the system, the acquisition of national missile defense systems works to enhance states' deterrence against adversaries as the capabilities work to make these states' commitment in retaliatory actions against attacks from the adversaries "more credible" (Quackenbush 2006: 540). Furthermore, while military-industrial complex may be the "internal drivers" for some individual cases, the explanation falls short of representing the overall trajectory in South Korea's arms acquisition patterns, given the institutional monitoring and audit mechanisms that counterbalance narrow self-interests of a few (Suh Jae-jung 2009: 113).

5) Gaps to Fill: Variation in Rationality in BMD and ISR Acquisitions in Cross-national and Cross-regime Context

Although the above existing explanations hold significant explanatory weight of their own, this study finds that South Korea's armaments, particularly in the state-of-the-art BMD and ISR weapons system, have been overshadowed by two monolithic conventions. First is a tinge of exceptionalism embedded in conceptualizing South Korea's arms acquisition pattern, arising from the thicket of literatures that explore the historical origin, transformation, and distinctive attributes of the ROK-US alliance. South Korea's threat environment and geopolitical dynamics of the Korean Peninsula, in which the "brothers" of same ethnic roots – North Korea – have persisted as the contested subject for both rivalry and reconciliation (Kim Sung-han 2003), South Korea's armaments tended to be a distinctive case for monographic analysis than comparison.

Interrelated, given the dearth of comprehensive cross-national comparison, the dominant rationalist explanation, for instance, has been inclined to perceive a kind of 'single' or 'unilateral' model of rationality among states, that their choices for allying and arming are inherently driven by their cost-benefit calculations for power-maximization. However, as seen in the case of South Korea's BMD and ISR acquisitions, the alliance and armament have not necessarily added up, nor provided the most efficient response to the given threats. Although the autonomy-security tradeoff model genuinely emphasizes the significance to look into the domestic

political process, in which agents and their preferences form and change, the existing literatures' application of the model have not fully exploited the notion that the states' pursuit for armaments can be more conditional to the domestic agents and contexts.

The structuralists, institutionalists, and constructivists have highlighted South Korea's arms acquisition to be bounded and/or reflective of existing structures. But as empirical observations illustrate, the structural, institutional, or normative effects had varying influences on the US allies and also across different time periods in South Korea. Rigorous empirical analysis into South Korea and other US allies' calculation of both "political and economic" costs and benefits of alliance and armament is required to capture the variations in the states' rationalities in arming.

Second major convention in studying South Korea's armaments is the so-called "conservative-progressive split" in perceiving the domestic political landscape of South Korea. While empirical studies on South Korea's armaments remain thin in addressing the two ten-year intervals of power transitions between progressive and conservative regimes since 1998, the opposite political orientations on North Korea and the ROK-US alliance tend to be both implicitly and explicitly treated as underlying sources of South Korea's limited armaments. Differently put, uncharted area in the above existing studies is analysis on comprehensive temporal variations in South Korea's arms acquisition pattern. Although cross-regime analysis has been a widely attended theme in defense reform studies (Lee Geunwook 2008; Park Hwee-rhak 2009; Noh Hoon 2012; Park Chang Kwoun 2012; Kim Tae-hyo 2013; Kim Yeoul Soo 2018), analysis on arms acquisition patterns of administrations has been

remote. The most recent cross-regime and -temporal study has been Lee Misook's article (2017), comparing defense acquisition policies of South Korean regimes from Roh Tae-woo (1988-1993), Kim Young-sam (1993-1998), to Kim Dae-jung administration (1998-2003). This is a significant empirical gap, considering how South Korea went through its first power transfers to progressive regimes under Kim Dae-jung (1998-2003) and Roh Moo-hyun (2003-2008) administrations, known for more reconciliatory take on North Korea and emphasis on autonomous defense posture. As the power transitioned back to conservative regimes under Lee Myung-bak (2008-2013) and Park Geun-hye (2013-2016) administrations, South Korean government rebounded to more hardlined policy on North Korea and pro-alliance stance in capability aggregation. Despite such opposite political orientations along the "conservative-progressive split" (Chae and Kim 2008; Snyder 2017; Shin and Burke 2008), it remains unaccounted how restrained armaments in autonomous BMD and ISR capabilities have been more of continuity than change in South Korea.

This study aims to provide comprehensive cross-national and cross-regime comparison on South Korea's BMD and ISR acquisitions in response to increasing asymmetric threats from North Korea.

3. Main Argument

This study argues that South Korea's restrained armaments in the autonomous BMD and ISR capabilities is accumulated complacency from policy leaders' recurrent choice for alliance-reliance in the state-of-the-art weapons system.

To begin from theoretical elaboration, this study brings in neoclassical realism as the theoretical underpinning of this research. Stripped to the essence, neoclassical realism is what Ira Katznelson and Barry R. Weingast (2005), and Park Cheol Hee (1998) would call a 'situated rationalist' approach to states' armaments, in which variation in states' arming becomes more *conditional* to how external threats become *filtered* through policy leaders' perception and their domestic contexts (Rose 1998; Schweller 2004; 2006; Taliaferro 2006). While systemic imperatives remain primary forces in driving states' arms build-up, states' armaments can be inflated and/or abated, 'situational' to policy leaders' perceived realities in neoclassical realism.

Unlike the existing literatures' portrayal that South Korea's restraint arises from the given structures, institutions, and norms under the ROK-US alliance, this study, in application of the theory, seeks to attenuate such deterministic or exceptionalist treatment of South Korean case. Placing South Korea in a cross-national context to other US allies including Japan, Taiwan, UK, and Germany, this study argues that South Korea's relative restraint in autonomous armaments in the BMD and ISR capabilities arises from policy leaders' accumulated state-strategies in

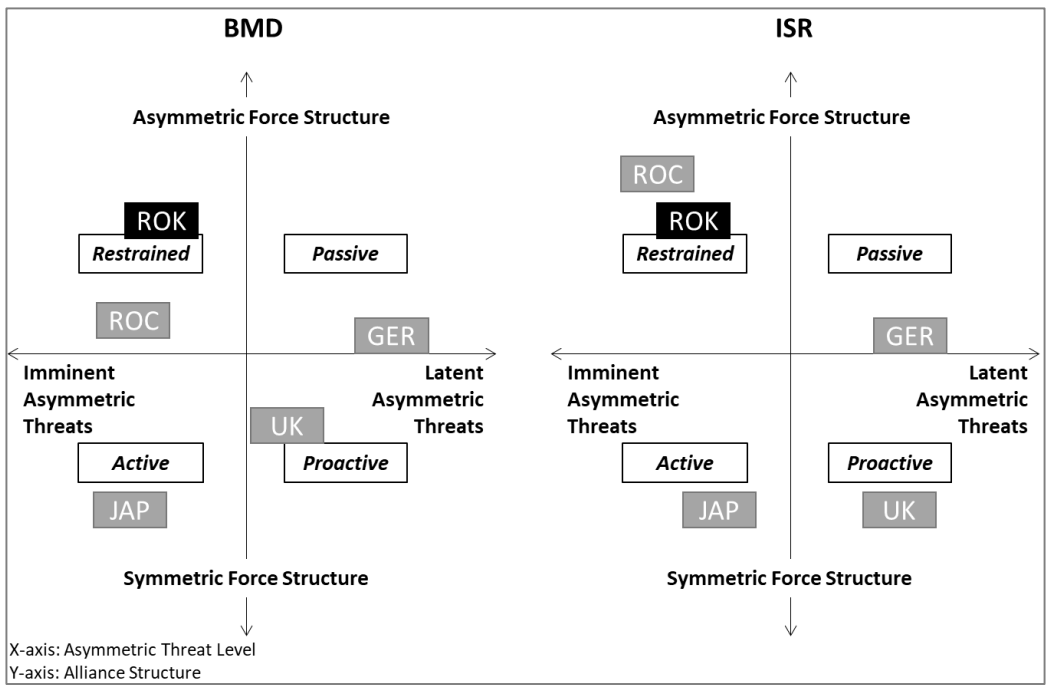
reinforcing the alliance-reliance in the state-of-the-art weapons system. As North Korea's emergence as de facto nuclear power aggravated South Korea's reliance on asymmetric division of force structure with the US (alliance structure), the vacillating threat perception on North Korea and armament priorities in lower-cost offensive strike capabilities in both progressive and conservative regimes reinforced South Korea's confinement to alliance-reliant armaments in the BMD and ISR.

Accumulated Complacency for Alliance-reliant Armaments

To elaborate, despite North Korea's increasing asymmetric threats, the asymmetry in force structure – the division of labor – between the South Korean military and the USFK presided in shaping the overall parameters of policy leaders' armament choices in the BMD and ISR. Although the US's force reduction in the 2000s along the GPR and agreement to transfer wartime OPCON to South Korea signaled possible attenuation of asymmetry in the force structure as South Korean government pledged for all-round arms build-up including the BMD and ISR, reescalation of North Korea's asymmetric capabilities since the late 2000s and repeated postponement of OPCON transfers reinstated overall asymmetry in the force structure between the US and South Korean military. Under the resilient influence from the structural factors, South Korean policy leaders' domestic fragmentation on the imminence of North Korea's asymmetric threats, increasing political consideration arising from the pull between the US and China, inter-Korean

reconciliation, and other national agendas at home reinforced South Korea's limited investments in the BMD and ISR capabilities. Considerations of the ROK-PRC relations, particularly in the realms of the BMD, further refracted South Korea towards alliance-reliance than autonomous armaments in the economically and politically thorny BMD and ISR, Figure 3.

Figure 3 Summary of Cross-national Comparison



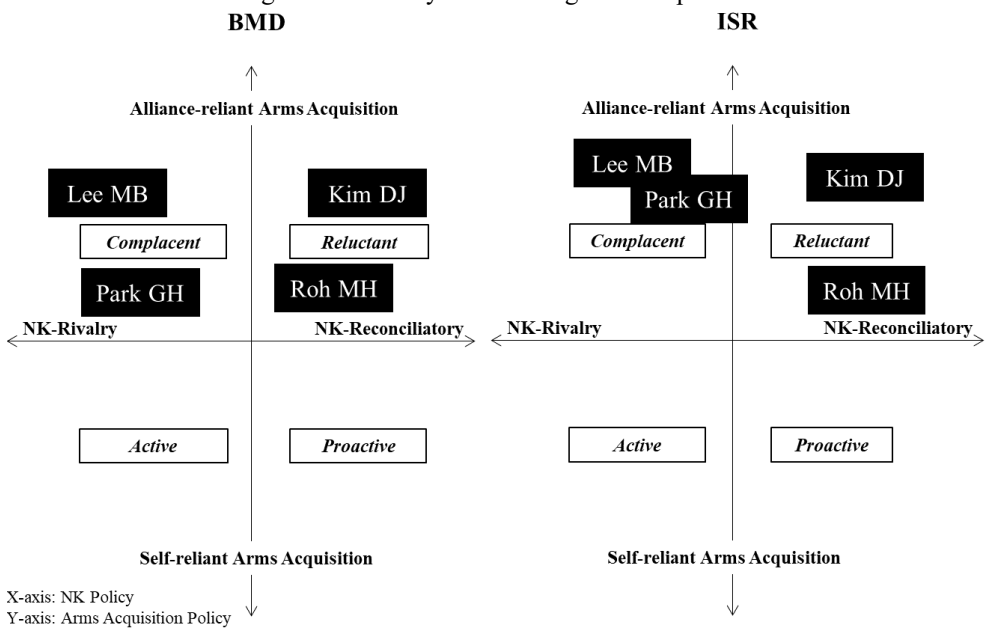
Preference of Incumbent Policy Leaders under Structural Influences

In cross-regime context, this study disconfirms the conventional view that the progressive and conservative regimes' arms choices have been 'split' and 'sharply divided,' particularly when it comes to the state-of-the-art BMD and ISR weapons system. While progressive regimes have been deemed more reconciliatory to North Korea and seek more autonomous policy towards armament and alliance-reliance, when conservatives were seen as more hardlined to North Korea, favorable to pro-alliance armaments as means for security, ideological divide mattered less when it came to the BMD and ISR capabilities.

Although such ideological/policy differences did alter the government's armament goals in the BMD and ISR at the outset of the administration, both progressive and conservative regimes recurred to reliance on the ROK-US combined defense system in BMD and ISR, while maintaining restrained growth in self-reliant capabilities. Such continuity arose from how both progressives and conservatives regardless of policy differences, preferred lower-cost, possibly homegrown, offensive missiles and strike capabilities that were seen as adequate in deterring North Korea's asymmetric threats in addition to their shared premise of the US's continued military presence. Both progressive and conservative regimes looked out for political connotations of their armament choices (pull between alliance-revisionist versus pro-alliance) between China and the US, and also at home for regime stability. Also, North Korea's repeated escalation of threats worked as common pull factor to the

ROK-US combined defense system.

Figure 4 Summary of Cross-regime Comparison



While progressive regimes under Kim Dae-jung (1998-2003) and Roh Moo-hyun (2003-2008) administrations have taken more reconciliatory approach to North Korea's asymmetric threats and emphasis on self-reliance in armaments, the progressive regimes have been situationally induced, however "reluctant," to resume to alliance-reliant armaments in the BMD and ISR capabilities. When power transferred back to conservative regimes under Lee Myung-bak (2008-2013) and Park Geun-hye (2013-2017) administrations, North Korea's rapid increases in asymmetric threats have restored pro-alliance or alliance-reliant proclivity in armaments, reinforcing South Korea's restrained armament in autonomous BMD and

ISR capabilities. Punctuated with economic crisis, ebb and flow in North Korea's asymmetric provocations, caught in between the increasingly contentious US-China rivalry in the region, continuity than change can be found in arming in the lower-cost, possibly homegrown, offensive missiles and conventional strike capabilities. Neither progressive and conservative governments have pursued armaments beyond the structural influences from asymmetric capability gap with North Korea and resilient asymmetric division of force structure with the US, Figure 4.

4. Composition of Research

The study is structured into three main chapters.

Chapter II focuses on constructing cross-national and cross-regime comparative frameworks to explain South Korea's relative restraint in autonomous armaments in the BMD and ISR capabilities. Putting forth neoclassical realism and situated rationality as major theoretical underpinning of this research, the study posits that while asymmetric threat level and alliance structure with the US are the primary structural (independent) variables, policy leaders' varying perceived threat level (threat perception) and arms acquisition policy (self-reliant versus alliance-reliant) become central intervening variables in abating/inflating the structural influences. To further delve into South Korea's cross-regime continuity and/or change in BMD and ISR acquisitions, the chapter further sets to specify the intervening variables for cross-regime comparisons – to the regime's North Korea policy (reconciliatory versus rivalry) and arms acquisition policy (self-reliant versus alliance-reliant).

In application of the cross-national framework, Chapter III centers on empirical contextualization of South Korea's arms acquisition pattern in cross-national context. Section 1 elaborates on Japan, Taiwan, UK, and Germany cases, in which varying level of asymmetric threats and alliance structure, intervened by policy leaders' threat perception and armament priorities (political and economic considerations) led to divergent, non-linear arms acquisitions in the BMD and ISR assets. Section 2 focuses on South Korea, bringing out contrasts and similarities

between South Korea and other US allies' arming in the BMD and ISR assets. Section 3 summarizes main findings of the chapter.

Chapter IV of the dissertation delves into cross-regime comparison on South Korea's arms acquisition pattern in the BMD and ISR weapons system. Despite North Korea's continued advancements in the asymmetric nuclear and ballistic missile capabilities, each chapter traces chronologically on how South Korean policy leaders under progressive and conservative regimes have vacillated on North Korea policy but recurred to armament choices that reinforce alliance-reliance in the state-of-the-art BMD and ISR capabilities. Section 1 begins from Kim Dae-jung administration, Section 2 looks into Roh Moo-hyun administration. Section 3 and 4 discusses the two conservative regimes – Lee Myung-bak and Park Geun-hye administration – respectively. Section 5 surmises how South Korean policy leaders' vacillation over North Korea and armament strategy across the ten-year intervals of progressive and conservative regimes since 1998 have accumulated to overall complacency to alliance-reliance than autonomous armaments in the BMD and ISR capabilities.

Chapter V concludes with summary of findings and implications of the dissertation in respect to recent transition of power back to progressive Moon Jae-in administration.

II. ANALYTICAL INNOVATION

1. Bringing Realism Back In Neoclassical Realism: Situated Rationality for Capability Aggregation

This study brings neoclassical realism as major theoretical underpinning of this research. As one of the theoretical strands to understanding international relations, neoclassical realism posits that variation in states' armaments against external threats emerges from how such systemic imperatives become *filtered* through policy leaders' perception and domestic contexts (Rose 1998). The theory becomes particularly useful in contextualizing South Korea's restraint in armaments in both cross-national and cross-regime dimensions, as the theory emerged in efforts to explain why states do not seek power-maximization as the "highest end," as stipulated by traditional structural realists (Waltz 1979),[29] but "underbalance" and *vary* in their responses to external security imperatives (Schweller 2004; 2006).[30] Reincorporating classical realists' observations on domestic unit-level variables, neoclassical realists contend that while the anarchic structure of the international system remains *primary* in

[29] For critique on how structural realism is limited in explaining state behaviors in the international system, see, Paul Schroeder (1994); Barry Buzan (1996); Richard Ned Lebow (1994).

[30] Neoclassical realists which explored how domestic factors intervene include Gideon Rose, who first labelled the term "neoclassical realism," as well as Jeffrey W. Taliaferro, Steven Lobell, Norrin Ripsman, Brian Rathbun, etc., see Rose (1998); Taliaferro (2006); Lobell et al. (2009); Rathbun (2008). Before earning the appellation, Stephen M. Walt (1998), Fareed Zakaria (1992), Jack L. Snyder (1991) and others have written seminal articles on realism and domestic politics.

shaping states' disposition for power (capability aggregation), domestic agents and processes come to intervene differently, "act[ing] as the final arbiter for state survival *within the anarchic environment*[emphasis added]" (Sterling-Folker 1997: 7).

Yet, as Jeffrey W. Legro and Andrew Moravcsik's article (1999), "Is Anybody Still a Realist," has been one of the most profound critiques on the theory, the main drawback of previous neoclassical realist literatures has been that the 'unblackboxing' of the state often tended to lose the realists' core premise that the structure (systemic variables) determines the state behaviors. Elucidating on the domestic processes and agents, as well as epistemic variables that seemed to be reserved only for liberalism and constructivism, neoclassical realists have befallen to the trap of treating the domestic factors as independent than intervening variables in analysis.[31]

Nonetheless, finding critical theoretical and empirical merits in constructing comprehensive understanding of variations in state behaviors, particularly in the states' choices between alliance and armament, this section of the dissertation aims to build upon Legro and Moravcsik's critique (1999), critically review existing neoclassical literatures, and thereby bring back 'realism' to neoclassical realism.

Shortly put, Legro and Moravcsik (1999: 28) found that neoclassical realists' emphasis on the domestic context have turned the theory "indistinguishable" from other non-realist theories.[32] Differently put, Legro and Moravcsik saw that this new

[31] An exemplary case, in which, the emphasis on domestic context appears to overpower neoclassical realists' original intention in linking structural/systemic variables *to* domestic variables, see Yoo Hyon Joo (2012).

[32] Legro and Moravcsik (1999: 23) also wrote, "Such explanations inevitably import consideration of

strand of realism has 'self-negated' the core assumptions of realism: While realism purports that 1) states are rational and unitary actors in anarchy, 2) with "fixed" and "uniform" preferences for power, and that 3) state behaviors are reflective of their material capabilities (Legro and Moravcsik 1999: 12-18), neoclassical realism has "flatly violate[d]" the latter two premises (Legro and Moravcsik 1999: 19). By exploring too much of the domestic politics, the neoclassical realists ended up becoming what Fareed Zakaria would call "a restatement of the traditional *Innenpolitik* case" (Zakaria 1992: 178), "only mudd[ying]" the theoretical boundaries of realism (1999: 50).

However, as Mark R. Brawley (2017) distinguished the differences between neoclassical realism and other non-realist theories, this study finds that the merits of neoclassical realism can be revived when analysis can be redesigned under which the direction of causality is clarified in linking the structural variables *to* domestic unit-level variables. Brawley (2017), in brief, argued that the analytical reasoning of neoclassical realism begins from 'constructing an understanding of the external environment.' It is therefore distinctive from the liberalists' "bottom-up" approach, which seeks to understand the "individuals" (Brawley 2017) first, "taking their preferences seriously" (Moravcsik 1997), and seeing the international relations as outcome of how endogenously constructed preferences are transmitted "up" to the international stage. Neoclassical realists, in contrast, perceive state behaviors to be

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exogenous variation in the societal and cultural sources of state preferences, thereby sacrificing both the coherence of realism and appropriating midrange theories of interstate conflict based on liberal assumptions."

dependent on how systemic imperatives become transmitted "down" to the domestic context, especially when it comes to "amass[ing] the resources" at home to meet changes in the international environment (Brawley 2017). In this way, the "theoretical core," which Legro and Moravcsik rightfully pointed out to have been lost in neoclassical realism can be brought back to the theory.

Additionally, I find denying the merits of neoclassical realism for 'easing' the old premises fails to appreciate how realist and non-realist paradigms have influenced and refined each other to better grasp the empirical reality. The blurring of theoretical distinctiveness is caused, at least partially, by how inherent power-centrism of realism has come to permeate other theoretical disciplines. As J. Samuel Barkin's treatise on "Realist Constructivism" (2003) has found overarching compatibilities between constructivism and realism, realists' tendency to reduce states to be driven by structural and materialist concerns has become common in non-realist traditions, particularly when it comes to discussions on power and security. States' rationality for "traditional geopolitical" conception of power (Larson and Shevchenko 2010) has frequently "smuggled back" more than often in the topics of armaments (Jo Bee Yun 2016).

The essential merits of neoclassical realism lie in abating realists' rigidity in depicting states to be constantly driven by their rational interests for power-maximization (capability aggregation). By looking into domestic agents while upholding realist emphasis on anarchy and states' concerns on security, states' rationality for capability aggregation has become more *situational* in neoclassical

realism.[33]

In other words, neoclassical realism advances the realist paradigm towards what I would call a model of "situated rationality" for capability aggregation. Although the Waltzian strand of structural realism has been, as Miles Kahler put, "ambiguous" on state's rationality as their emphasis on structure made the discussions on "rationality of agents see[m] superfluous" (Kahler 1998: 925), realism has generally portrayed the states to be rational and unitary actors with fixed interests for power (capability aggregation). Therefore, while states' underbalancing in structural realism, would be 'irrational,' neoclassical realists' exploration into states' key agents and their circumstances now enables the realist paradigm to see states' balancing to be, as how Ira Katznelson, Barry R. Weingast, and Park Cheol Hee would describe, more "situationally induced" (Katnelson and Weingast 2005: 4) and "defined" (Park Cheol Hee 1998: 59). With focus on how agents' particular preferences, their considerations for domestic politics and societal relations (e.g. regime stability) can *intervene*, states' rationality for armaments (capability aggregation) against exogenous threats becomes situational in neoclassical realism, which does not necessarily adhere to "cool-headed, cost-benefit calculations" for power-maximization (Morgan 2003: 12-13).

The notion of "situated rationality" originates from the debate between

[33] Colin Duek(2009: 272)'s description nicely surmises the point: "A neoclassical realist model begins by positing that state officials inevitably have some conception of the national interest in the face of potential external threats… The anarchic condition of the international arena forces states to pay close attention to their security… domestic political or second image causes can have a powerful impact on patterns… shaping or skewing foreign policy choices…"

rational-choice theorists and historical institutionalism, which diverged in their position on preference formation in social science. Yet, as the neoclassical realism has begun to pay attention to the preferences and perception of key elites and decision-makers, intriguing parallels could be drawn from the discussions. The rational-choice theorists have argued that actors are driven by preferences that are exogenously given (such as power in traditional realism), while historical institutionalists disputed the view that actors' preferences are of historical and social constructs. However, as the rational-choice theorists have begun to attend for "historical and institutional processes" in understanding actors' preferences, while historical institutionalists on how preferences can be exogenously induced, there emerged some convergence between the two schools. The rational-choice theorists, in particular, according to Katznelson and Weingast (2005: 8), have become "far more empirical, conditional, and situational in deploying preferences," placing them in context of "interaction with other actors." As a kind of third approach to the debate, "situated rationality" emerged upon such cross-fertilization of the two schools, in which the actors become no longer confined to exogenously given (rational-choice) nor endogenously constructed (historical institutionalism) imperatives, but, as Park Cheol Hee (1998: 60) put, decide their actions under "perceived realities, available alternatives, mobilizable resources, and embedded relationships."

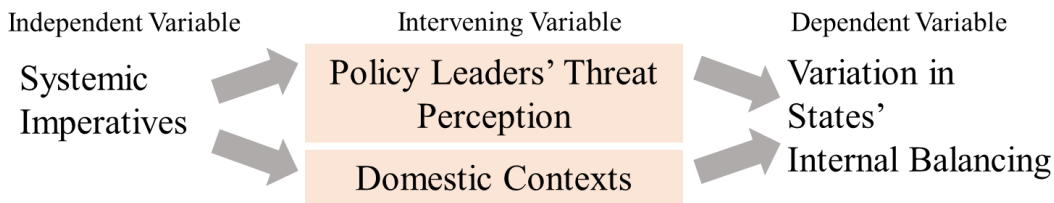
Neoclassical realist discussions have been explicitly resonant of such 'situated' approach, portraying states' internal balancing (armaments) to be contingent to the elites' perceived external vulnerabilities and diverse political,

economic, and social considerations at home. Randall L. Schweller's elite cohesion/fragmentation model (2004: 164), for instance, argued that variations in states' response to external threats become situational to policy leaders' threat perception and how they "weigh the likely *domestic costs*[emphasis added] of balancing behavior against the *alternative means available to them*[emphasis added]." The level of elites' consensus on threat perception and internal cohesion in domestic politics would be, therefore, important, for they would grant lesser political and social oppositions or constraints at home (what Schweller calls "mobilization hurdles" or "domestic costs") in implementing preferred security policies to address the threats. The higher the division among policy elites on "how to respond to the threat" (Schweller 2004: 170), the more constrained the state would be in putting forth effective internal balancing measures in meeting external security imperatives, and vice versa. Jeffrey W. Taliaferro's resource-extractive state model (2006) also similarly argued that the "types of internal balancing strategies" are shaped by "the relative ability of the state to extract or mobilize resources" – "the extraction and mobilization capacity" – as well as the sense of "external vulnerability."

All in all, in accounting for cross-national and cross-regime comparison on South Korea's arms acquisition patterns, the theoretical merit of neoclassical realism lies in retaining traditional realists' attention to the external conditions, while accounting for domestic contexts and agents, which allows observations than blackbox how their primacy in security concerns (pursuit for capability aggregation against systemic imperatives) can be more 'situationally induced.' Under systemic

imperatives, how the domestic agents "perceive" their realities and weigh the costs of armaments can reinforce and/or abate the structural influences in determining the states' decisions – the foundation to why states overbalance and underbalance against threats, Figure 5.

Figure 5 Neoclassical Realism

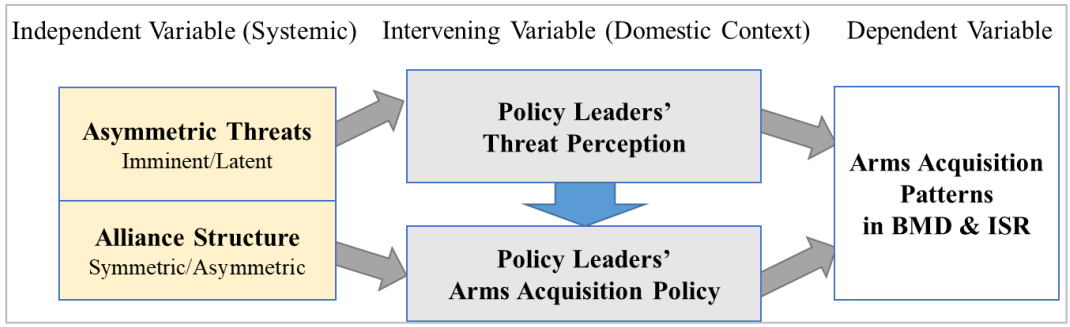


2. Analytical Framework

1) For Cross-national Comparison

In light of neoclassical realism and situated rationality, this study posits that the variation in the US allies' arming in the BMD and ISR sectors can be distinguished along how increasing asymmetric threats and alliance structure with the US – two independent variables – become filtered by two central intervening variables – policy leaders' threat perception (threat imminence or latency from nuclear and ballistic missile capabilities) and their arms acquisition policy (alliance-reliant or -parallel armament), Figure 6. While independent structural variables would predominate states' armaments in the BMD and ISR, further variations within the US allies would arise from how states' domestic contexts divert the structural forces.

Figure 6 Analytic Framework for Cross-national Comparison



(1) Independent Variable (1): Asymmetric Threats

Increases in asymmetric nuclear and ballistic missile threats from rivaling powers are foundational stimuli to the states' armaments in the BMD and ISR. Defining the asymmetric threats to be derivative of the rivaling powers' qualitative and quantitative increases in asymmetric capabilities and frequency of nuclear and ballistic missile tests, this study posits that the US allies' armaments in the BMD and ISR are contingent to the increasing level of asymmetric threats. Although the proposition does not dispute how the perceptual realms can inflate and/or deflate the given threat levels (Jervis 1976; Rathjens 1969), this study adheres to McNamara (1967) earlier conclusion that "Whatever their intentions or our intentions, actions" – offensive or defensive – "on either side relating to the buildup of nuclear forces necessarily trigger reactions on the other side" (Freedman 1981). Also, in reference to extensive studies on states' military expenditures and arms race, this study posits that states' threat levels are also determined by the relative balance in the number of deployed weapons (Ward 1984) and military expenditures of the adversary, as well as states' 'grievances' on the adversary (Richardson 1960). Depending on the number and quality of deployed/deployable nuclear warheads and missiles, heightened by the number of nuclear and missile tests, overall gap in military balance and expenditures, the US allies' external threat environment will be distinguished into 'immediate' to 'latent' asymmetric threats.

(2) Independent Variable (2): Alliance Structure

Another determining independent variable for the US allies' variations in the BMD and ISR capabilities is the level of symmetry or asymmetry in the force structure embedded in the alliance – between the state's own military and their reliance on the US-stationed or US-deployable weapons system. Among South Korea, Japan, and Taiwan, for instance, in response to North Korea and/or China's modernizations in asymmetric ballistic missiles, the states' varying level of autonomous defense capabilities and the US's security provisions – the "division of labor" (Park Hwee-rhak 2016d) – set the parameters of armaments in the state-of-the-art BMD and ISR. Although both South Korea and Japan's security postures include the US's military presence and stationing of advanced weapons system, South Korea has maintained more asymmetric force structure under the ROK-US combined defense system. Aside from the wartime OPCON of South Korean military maintained under the US's leadership, South Korea also relied on the US's extended nuclear deterrence, provision of advanced satellite and reconnaissance capabilities, stationing and/or rotational deployment of advanced air and maritime weapons system, while prioritizing armaments in conventional ground forces, human intelligence (HUMINT), and strike capabilities including the missiles. Although North Korea's increasing asymmetric threats would push for arms build-up in the BMD and ISR, such asymmetric division of labor would create path-dependent influence on reinforcing the policy leaders' priorities in expanding the range and qualities of missiles and other strike capabilities per se, while relaying the advanced

BMD and ISR tasks to the USFK.

Japan, in contrast, has maintained more parallel or symmetric division of labor. Without the joint operational command structure found in the case of South Korea (and also within the North Atlantic Treaty Organization, NATO), Japan's conventional self-defense forces have very much accumulated to parallel armaments to the USFJ. While Japan has also relayed nuclear deterrence to the US's provision of nuclear umbrella, symmetricity between Japan and the US-stationed weapons system is higher than the South Korean case. Such symmetricity would shape the policy leaders' level of armaments in the BMD and ISR.

Taiwan, without formal treaty alliance nor US's military presence on its soil, cannot but be impelled to seek more symmetric force structure. Despite resource constraints to about a quarter of South Korea's defense budget, the absence of formal agreement or explicit institutionalization of division of labor between the ROC and US forces would compel Taiwan towards more active armaments.

As Loch Johnson (2008) wrote, the US dominates the military ventures with "the largest and most expensive [apparatuses] in the history of humankind." Under the so-called "autarky-efficiency dilemma" (Moravcsik 1991), 'self-sufficiency,' 'self-reliance,' or 'autarky' in armaments – the ability to "procure and produce domestically quantities and qualities of military supplies, raw materials, and equipment" (Esper 1969: 185-186) – has been rare except for very few first-tier arms producers like the US (Krause 1992; Harkavy 1975). Alliance-reliance, although with varying degrees, has thus been indispensable to the US allies. Yet, the given

symmetry/asymmetry in the division of labor would set the initial parameters of policy leaders' armament choices and priorities.

(3) Intervening Variable (1): Policy Leaders' Threat Perception

While the above two structural variables would predominate the US allies' armament patterns in the BMD and ISR, the anomalies or variations would arise from, first of all, how the policy leaders perceive the given threats. This first intervening variable is adopted from neoclassical realism's main tenet that the changes in the external environment are "filtered" through domestic elites/policy leaders – how the systemic imperatives are conceived as 'imminent' versus 'latent.' The higher the threat imminence perceived, as Taliaferro (2006) put, the more policy leaders would be interested in seeking armaments. The threat perception may not necessarily correlate with actual increases or decreases in rivaling powers' asymmetric capabilities and provocations. To befit the analysis, this dissertation defines and categorizes policy leaders' threat perception on adversary's asymmetric nuclear and ballistic missiles, as the following, Table 4:

Table 4 Cross-national Intervening Variable (1): Policy Leaders' Threat Perception

Policy Leaders' Threat Perception	**Definition**
Imminent Threat Perception	Policy leaders perceive that the rivaling powers' increasing asymmetric capabilities are direct threat to the state
Latent Threat Perception	Policy leaders does not recognize specific entity/states' increasing asymmetric capabilities as direct threat to the state

Furthermore, distinguishing from previous neoclassical realist literatures, 'policy leaders' in this study refers precisely to the executive branch – the political executives including presidents, prime ministers, cabinet members, and ministers (Bach 2018). The main rationale is that the state-of-the-art BMD and ISR assets demand comparatively astronomical amount of resource mobilization and allocation – one of the so-called 'flagship policy areas' of the government, in which the motivation and interests of executives become pivotal in the implementation. Although shorter time-horizon and limited policy expertise would make executives responsive to the preferences of bureaucrats, militaries, and other relevant government organizations (Bach and Wegrich 2018; Okimoto 1990; Lodge and Wegrich 2014; Aberbach et al. 1981; Scharpf 1994), executives' ability to elect and replace top officials of the organizations tends to ensure the executives' final say in major policy agendas (Dahlstroem et al. 2011; Rudalevige 2009; Peters and Pierre 2004; Hollibaugh et al. 2014). Presidents are particularly dominant, notwithstanding power and influence from the national assembly or congress (Trimble 1989: 752), especially during "times of war or national emergency [wherein] the executive branch tends to eclipse the legislature" (Masters 2017). Furthermore, as agents with the most stake in maintaining regime stability or survival, the interlinkage between policy leaders' conception of external environment and domestic conditions can be elucidated by looking into the executive leadership. As Lobell (2009) narrowed down to the foreign policy executives in accounting for variation in states' foreign policies, the process of how leaders, "especially vulnerable ones, cannot simply choose

security policies" but have to consider the "costs attached to the policy options," as Schweller (2004: 174) mentioned, can be better accounted by zooming down to the executive branch.

(4) Intervening Variable (2): Policy Leaders' Arms Acquisition Policy

The second intervening variable in determining the US allies' arming in the BMD and ISR sectors is the policy leaders' varying arms acquisition policy. Building upon the notion of "resource-extractive capacity" from the neoclassical realist literatures, which depict states' armaments to be situational to policy leaders' relative capacity to extract/mobilize resources *at home* against diverse domestic constraints (political, economic, and social constraints) or what Yoo Hyon Joo (2012: 326-327) calls "domestic hurdles," this study argues that the states' pursuit for BMD and ISR armaments can be influenced by the policy leaders' varying resource-extractive capacity to 'self-reliant' versus 'alliance-reliant' arms acquisitions.[34]

Although complete self-reliance in the BMD and ISR capabilities is hardly plausible, given the long lead time and exponential costs required in arms procurement, the underlying rationale is that the pursuit for 'self-reliance' has been important competing value for policy leaders among the US allies. In the realms of security, policy leaders have been drawn to the security benefits of reducing states' exposure to alliance-reliance that come with diverse concessions and demands from

[34] Although the topic of analysis is different, the distinction made between South Korea's "self-reliant" to Japan's "cooperative" approach to the US's BMD system by Park Hwee-rhak (2018) was important for refining the framework.

the alliance. Also, as Srdjan Vucetic and Atsushi Tago (2014) intriguingly noted, the pursuit for self-reliance in armaments has emerged as important political assets for policy leaders. Although expensive arms procurement decisions have always carried "political controversy," "inefficiencies" arising from efforts to enhance autonomy in armaments often "deemed [as more] acceptable" to public (Vucetic and Tago 2014: 119). This has been more so wherein alliance-reliance becomes increasingly negatively connoted as overcharged and depriving of their own opportunities for autonomy and defense-industrialization.[35] In ties to growing anti-American and anti-US base movements among the civilian society of the US allies, as Peter W. Rodman (2000) and Mark E. Manyin (2003) observed, policy leaders have become more accountable to increasing voices against the arms of the US origin (Ku Young-sik 2017). Self-reliant arms acquisition has paved a leeway for policy leaders to position themselves against any 'pro-alliance' stigmatization from the public. Alliance-reliant arms acquisition, in contrast, provides the security benefits of reinforcing and/or signaling the US's security commitment for the allied state, economic benefits of curtailing arms spending, and political benefits that arise from the government's ability to allocate resources for other national agendas than armaments.

Caught in between the two competing values of self-reliant and alliance-reliant arms acquisitions, policy leaders' emphasis on self-reliance would dilute/attenuate the influence of asymmetric alliance structure (independent variable).

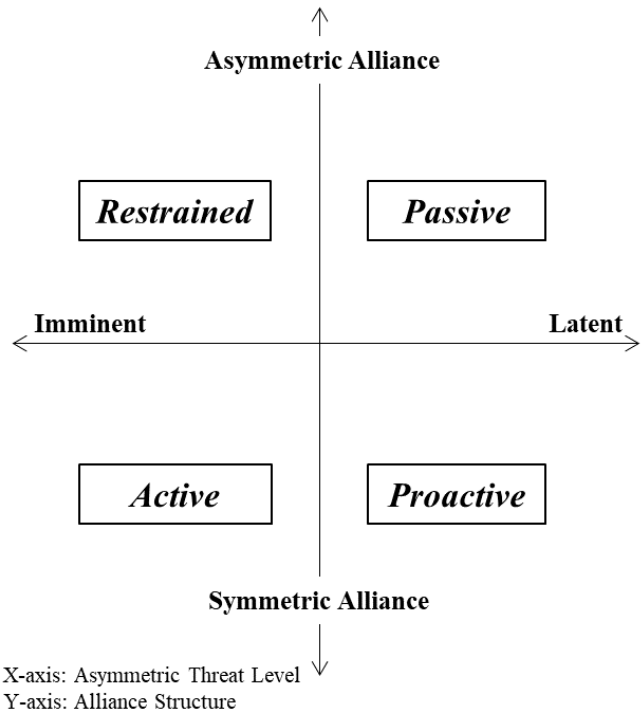
[35] Moon Chang-soo, retired colonel, in interview with journalist Ku Young-sik from OhmyNews, see, Ku Young-sik (2017); Rodman (2000); Manyin (2003).

In case of symmetric alliances, policy leaders' self-reliant armaments would magnify the structural forces in seeking alliance-parallel, autonomous armaments in the state-of-the-art BMD and ISR. The policy leaders' alliance-reliant arms acquisitions, in contrast, would aggravate the path-dependent influence from the asymmetric alliance structure, while alliance-reliant arms acquisitions in symmetric alliances would lessen the degree in the states' pursuit for autonomous armaments.

(5) Charting the Cross-national Variation in Arming in the BMD and ISR

Taken together, this study posits that the US allies' arming in the BMD and ISR can be generalized into four distinctive arms acquisition patterns, Figure 7. While the US allies' armaments in the state-of-the-art BMD and ISR weapons system are contingent to the level of asymmetric threats from the rivaling powers and symmetricity in the alliance structure with the US, policy leaders' threat perception and arms acquisition policy would account for the US allies' varying rationalities that cannot be fully captured at the structural dimensions. The extent of influence from intervening variables would also determine the positions within each quadrant below.

Figure 7 Charting Four Major Arms Acquisition Patterns



Asymmetric Threat Level / Alliance Structure	Imminent	Latent
Asymmetric	Restrained	Passive
Symmetric	Active	Proactive

(i) Active arms acquisition: Under imminent asymmetric threats and symmetric alliance structure with the US, policy leaders are likely to seek 'active' armaments in the state-of-the-art BMD and ISR weapons system in parallel to the US deployed/deployable weapons system.

(ii) Restrained arms acquisition: Despite imminent asymmetric threats, asymmetric alliance structure is likely to reinforce the state's reliance on the US deployed/deployable weapons system, while 'restrained' in its own

armaments.

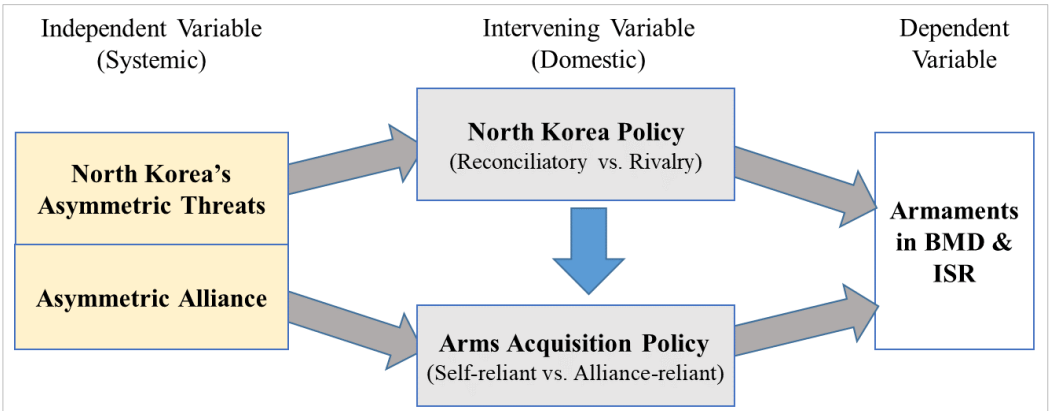
(iii) Proactive arms acquisition: Despite latent asymmetric threats, policy leaders under symmetric alliance structure are likely to be induced to 'proactive' armaments in the BMD and ISR.

(iv) Passive arms acquisition: Under latent asymmetric threats and asymmetric alliance structure, policy leaders are likely to be 'passive' in the costly BMD and ISR acquisitions.

2) For Cross-regime Comparison

In further application of the cross-national framework, the latter half of the dissertation aims to explain South Korea's continuity in restraint in the BMD and ISR across both progressive and conservative regimes. Placed under North Korea's increasing asymmetric nuclear and ballistic threat levels (asymmetric threats) and asymmetric division of labor in force structure (alliance structure), the variations and/or continuity across progressive and conservative regimes within South Korea in BMD and ISR acquisitions can be captured via two specific intervening variables: 1) the regime's North Korea policy – reconciliatory versus rivalry, established upon their ideological differences in perceiving North Korean threats and emphasis on inter-Korean reconciliation; and 2) the regime's arms acquisition policy – self-reliant versus alliance-reliant armaments in the state-of-the-art BMD and ISR, Figure 8.

Figure 8 Framework for Cross-regime Comparison



(1) Independent Variables:

North Korea's Asymmetric Threats and Asymmetric Alliance Structure

Adopting from the cross-national framework, North Korea's ebb and flow in nuclear and ballistic missile tests and the asymmetric division of labor between South Korean military and the USFK shape South Korea's pursuit for BMD and ISR armaments. As the 1994 Agreed Framework (Geneva Convention) – aimed to freeze and replace North Korea's indigenous nuclear program[36] – collapsed with North Korea's disclosure of highly-enriched uranium (HEU) program in 2002 and withdrawal from the Non-proliferation Treaty (NPT) in 2003, North Korea's asymmetric nuclear and ballistic missile threats began to re-escalate in the mid-2000s, launching its first nuclear test in October 2006. Although the multilateral Six Party Talks since 2003 accumulated to the 2007 agreement, seeming to again curtail North

[36] "The Agreed Framework between the United States of America and the Democratic People's Republic of Korea," signed on October 21, 1994.

Korea's military provocations in 2008,[37] North Korea again resumed in 2009 with the second nuclear test and multiple ballistic missile tests, including the Nodong medium-range ballistic missiles (MRBM). North Korea's asymmetric threats escalated to unprecedented level since 2013 under Kim Jong-un regime, reaching its peak in 2017 with alleged successful hydrogen bomb and intercontinental ballistic missile (ICBM). North Korea's incremental ebb and flow in nuclear and ballistic missile tests have been critical stimulus in renewing South Korean governments' interests in BMD and ISR as important countermeasures.

While North Korea's increasing asymmetric threats is an important push factor towards autonomous armaments in the BMD and ISR, the asymmetric alliance structure has been the opposite independent variable, pulling back to restrained armaments. The asymmetric division of force structure, under which South Korea relied on the US's provision of extended nuclear deterrence, the USFK's stationing of PAC-2s (since 1993). later upgraded by PAC-3s in 2004, as well as the USFK's tactical and strategic ISR capabilities (including satellites), have created path-dependent influence on South Korea's restraint in autonomous BMD and ISR capabilities. Although the asymmetry in force structure appeared to change in flux of the US's strategic transformations, particularly after 9/11, announcing the GPR in 2004 that ensued with the USFK's troop reduction, dispatch of Second Infantry Division to Iraq, and 2006 agreement to transfer wartime OPCON back to South Korean military, the US's Pivot to Asia by the 2010s and South Korea's repeated

[37] In this second 6PT agreement in February 2007, North Korea again agreed to denuclearization.

postponement of OPCON transfer reinstated the asymmetry in the force structure.

(2) Intervening Variable (1):

Reconciliatory versus Rivalry North Korea Policy

Caught in between North Korea's increasing asymmetric threats and resilience of asymmetric alliance structure, limited variations in pursuit for arms build-up in the BMD and ISR arise from how South Korean policy leaders of progressive and conservative regimes diverge along 'reconciliatory' versus 'rivalry' take on North Korea's increasing asymmetric capabilities. North Korea's asymmetric capabilities have been highly ideologically laden subject in South Korea, wherein the progressives, with emphasis on inter-Korean reconciliation and engagement, inclined to perceive as North Korea's efforts for survival and bargain chip within the US-DPRK relations than direct threat to South Korea. Conservatives, in contrast, have been skeptical of engagement, placing more confrontational, hardlined approach, perceiving North Korea's asymmetric threats as more immediate and direct security concerns for South Korea. Divided into 'reconciliatory' versus 'rivalry' policy on North Korea's asymmetric capabilities, North Korea's increasing asymmetric threats are likely to be diluted under progressive regimes, while inflated under conservative regimes.

For more precise definitions, North Korea policy can be distinguished as the following, Table 5:

Table 5 Cross-regime Intervening Variable (1): North Korea Policy

North Korea Policy	Definition
Reconciliatory	Policy leaders seek engagement with North Korea and maintain tolerant, 'reconciliatory' stance against North Korea's increasing asymmetric capabilities.
Rivalry	Policy leaders are skeptical of engagement and maintain hardline, 'rivalry' stance against North Korea, including their increasing asymmetric capabilities.

(3) Intervening Variable (2): Alliance-reliant versus Self-reliant Arms Acquisition Policy

Under North Korea's increasing asymmetric threats and asymmetric force structure with the US, South Korean regimes vary in their pursuit for BMD and ISR armaments between 'self-reliant' versus 'alliance-reliant' arms acquisition policy.

Specific to the BMD, self-reliant arms acquisitions have been critical for South Korean policy leaders in attenuating the external pressures arising from the US-China rivalry. While the US has pressured South Korea to join the US-led BMD since the 1980s, China with increasing assertiveness in the 2000s has criticized and retaliated against measures that implied South Korea's integration into the US-joined BMD system. Although such external pressures from the US and China have been more or less mute in the realms of ISR, the higher the policy leaders' political considerations between the US and China, South Korean policy leaders would opt for self-reliant arms acquisition policy, under which the path-dependent structural forces from asymmetric alliance structure may be attenuated. North Korea's increasing asymmetric threats can be in the same way diluted in affecting South Korea's

enhanced armaments in the BMD, as self-reliant arms acquisitions involve lengthier time scope and investments.

The ROK-US agreement to transfer wartime OPCON in 2006 has been another critical juncture in shaping the policy leaders' considerations for self-reliance in the BMD and ISR. While progress in the timeline of OPCON transfer would stimulate self-reliant arms acquisitions to meet the force vacuum arising from the asymmetric division of labor in ROK-USFK force structure, postponements in the transfer would reinvigorate cost considerations and reinforce alliance-reliance on the USFK's capabilities.

The pull between self-reliant and alliance-reliant arms acquisition policy among South Korean policy leaders has been also subject to political and economic costs and benefits elaborated above (cross-national framework).

Caught in between the two competing values of self-reliant and alliance-reliant arms acquisitions – between reform and status-quo – the regime's emphasis on more alliance-reliance would further aggravate the path-dependent influence from the asymmetric alliance structure (independent variable). Should the regime strive for more self-reliance, the structural forces, although limited, will be deflated, Table 6.

Table 6 Cross-regime Intervening Variable (2): Arms Acquisition Policy

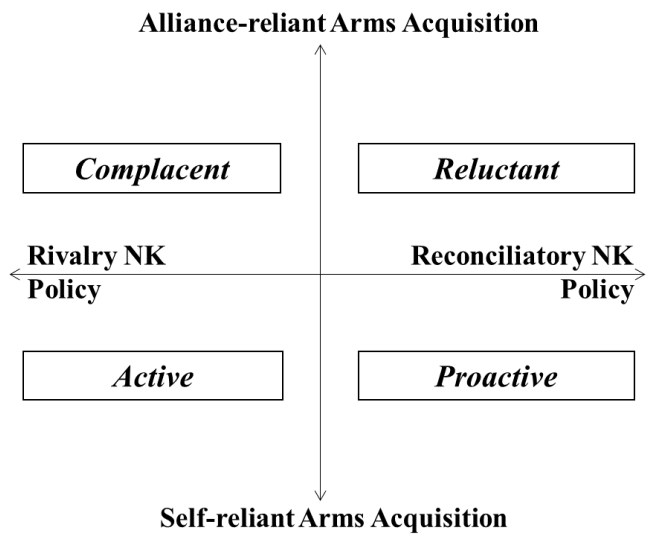
Arms Acquisition Policy	Definition
Self-reliant	Policy leaders' armament priorities exert more emphasis on enhancing South Korea's self-reliance in armaments within the asymmetric alliance structure.

Alliance-reliant	Policy leaders' armament priorities exert more emphasis on enhancing South Korea's alliance-reliance, reinforcing the asymmetric alliance structure.

(4) Charting the Cross-regime Variations

Taken together, this study posits that although the structural forces from North Korea's increasing asymmetric threats and resilient asymmetric alliance structure with the US predominate in shaping South Korea's armaments in the BMD and ISR, cross-regime variations would occur across the two cross-axis of intervening variables, Figure 9:

Figure 9 Cross-regime Framework for US Allies' Arming in the BMD and ISR



North Korea Policy / Arms Acquisition Policy	Rivalry	Reconciliatory
Alliance-reliant	Complacent	Reluctant
Self-reliant	Active	Proactive

(i) Complacent arms acquisition: Despite ‘rivalry’ policy on North Korea’s increasing asymmetric capabilities, the pursuit for ‘alliance-reliant’ armaments in the state-of-the-art military ventures is likely to draw policy leaders to seek ‘complacent’ armaments in the BMD and ISR weapons system, reinforcing the asymmetric alliance structure.

(ii) Active arms acquisition: In pursuit of ‘self-reliant’ armaments against ‘rivalry’ conception on North Korea, incumbent policy leaders are likely to seek ‘active’ armaments in the state-of-the-art BMD and ISR weapons system, attenuating the structural forces arising from the asymmetric alliance structure.

(iii) Reluctant arms acquisition: In pursuit of ‘alliance-reliant’ and ‘reconciliatory’ policy on North Korea’s asymmetric threats, policy leaders are likely to seek ‘reluctant’ armaments in the BMD and ISR.

(iv) Proactive arms acquisition: Despite ‘reconciliatory’ policy on North Korea’s asymmetric threats, incumbent policy leaders in pursuit of ‘self-reliant’ armaments are likely to seek ‘proactive’ armaments in the BMD and ISR to seek arms build-up against other potential threats.

III. SOUTH KOREA'S RESTRAINED ARMS ACQUISITION IN CROSS-NATIONAL CONTEXT

1. The US Allies' Arms Acquisition Patterns in the BMD and ISR

1) Arming against Imminent Asymmetric Threats

Surrounded by nuclear capable China (People's Republic of China, PRC), Russia, and newly emergent de facto nuclear power, North Korea, the Northeast Asian region has seen the nuclear powers' resurgence in the post-Cold War era with their advancements in ballistic missile capabilities. While the asymmetric threats and capabilities have become the new normal of the security environment, South Korea's arms acquisition patterns in the state-of-the-art BMD and ISR capabilities can be most explicitly distinguished in the context of how the key allies and partners of the US like Japan and Taiwan in the region have diverged in their responses.

The section highlights how South Korea, increasingly portrayed as the "hesitant" (Park Cheol Hee 2019), "reluctant" (Roehrig 2017), or "ambivalent" (Kim Joon Hyung 2019) ally,[38] retained heavier reliance on the US's BMD and ISR capabilities, while the "enthusiastic" ally of the US (Roehrig 2017), Japan, pursued

[38] Ambivalence not as in mere ROK-US alliance but in overall deterrence and peace-keeping initiatives.

more active armaments in autonomous BMD and ISR capabilities. Fueled by the systemic imperatives arising from North Korea and China's increasing asymmetric threats, the US's vacillation in their strategic focus between the Middle East and Asia in the 2000s, Japanese policy leaders' consensus on the immediate threat environment further induced active armaments in the BMD and ISR. Extending the symmetricity in force structure between Japan's SDFs and the USFJ, Japanese policy leaders pursued self-reliant armaments in both the BMD and ISR capabilities, to the extent that the weapons system become useful redundancy to the US's security provisions.

Taiwan is another intriguing case, which despite similarities in the structural environment arising from the adversary's increasing nuclear and ballistic missile capabilities and asymmetric alliance with the US, has shown higher level of autonomous armaments in the BMD and ISR than in the South Korean case. Although Taiwan has spent about a quarter of South Korea's military expenditures, relative convergence on the policy leaders' threat perception and self-reliant arms acquisition policy appear to have abated the structural forces in restraining Taiwanese autonomous armaments in the BMD and ISR.

(1) Active Arms Acquisition for Capability Aggregation: Japan

Japan's active armaments in the state-of-the-art BMD and ISR capabilities have in foundation stimulated by the threat imminence forged upon North Korea's asymmetric nuclear and ballistic missile tests and China's resurgence since the late 1990s. With heightened threat perception since North Korea's Taepodong-launch in 1998, which overflew Japanese territory and landed in the Pacific Ocean, and China's modernization of its ballistic missiles have further preoccupied Japanese cabinet on their military capabilities. As Sheila A. Smith (2019) points out, the emergence of nuclear North Korea and assertive China since the 2000s, have revealed the limitations of the US's security provisions in the region and how it may "not [be] in their best interest to limit their military as others invest in their own."

Japan's Active BMD Armaments in the Parameters of the Alliance

To elaborate on Japan's active armaments in the BMD capabilities, three different phases can be distinguished in understanding how the policy leaders' rationalities accumulated in response to the changes in asymmetric threats and force structure within the US-Japan alliance. The initial phase of the process dates back to the early 1990s when North Korea test-launched the medium-range Nodong ballistic missiles in May 1990 and May 1993, placing Japan for the first time within North Korea's target ranges. While threats from China remained relatively latent, North Korea's ballistic missile tests have been recognized immediately as direct threat to Japan in

the defense white paper (Japan Defense Agency 1991). As observable from the remarks by Keisuke Nakanishi, the Chief of Defense Agency, in meeting with the US Defense Secretary Les Aspin on September 27, 1993, Japan showed interest in joining the US's BMD (then TMD) architecture, also calling for replacement of Japan's defense policy in 1993, which rested on the 1976 framework that restrained Japan's armaments in air defense capabilities.

While North Korea's missile launches stimulated Japan to deliberate on the BMD system, the relative symmetric force structure between Japan's SDFs and USFJ induced the policy leaders to consider both means of building autonomous BMD capabilities in tandem with joining the US-led BMD architecture. Namely, Japan has already signed to procure the PAC-2 through license production in 1985. Considering how South Korea relied on the US-stationed PAC-2s throughout the 1990s, only coming down to the decision to acquire second-hand PAC-2s from Germany in 2006, the earlier models of Patriot batteries without the hit-to-kill interceptive technology reflected relative symmetry in the US-Japan alliance structure. With plans to deploy twenty-six of the PAC-2 missiles over the 1990s, Japan in response to North Korea's ballistic missile tests in the early 1990s came down to joint research program with the US, launching the US-Japan Theater Missile Defense (TMD) Working Group since 1993 to review the technical requirements and possible realms of cooperation between the two allies. After meeting twelve times, the group further evolved to bilateral program for joint study on BMD technologies, for which the Japanese government allocated about $7.3 million from 1995 to 1998 (Oros 2008; Yoo Hyon

Joo 2012: 330).

Aside from structural stimuli arising from North Korea's missile tests, Japan's interests in BMD armaments have been further reinforced by overall consensus among domestic policy leaders in perceiving the given threat environment. As the two Nodong ballistic missile tests occurred within the long reign of conservative Liberal Democratic Party (LDP) dominance in Japanese leadership, the majority of policy leaders has been "shocked" by North Korea's missile test. Also, in reflection of the PAC-2s in deployment, the key policy leaders of the conservative LDP government, such as Seiroku Kajiyama and Keisuke Nakanishi (Chief of Defense Agency), argued that the first-generation PAC-2s would not be adequate protection against the ballistic missiles.[39]

Furthermore, as this study finds, the early 1990s marks a momentum when Japanese policy leaders in both government and Japan's defense industry came down to overall consensus in the merits of self-reliant armaments – pursuit of *kokusanka* – within the parameters of the US-Japan alliance. By the time of the early 1990s, Japan's trade frictions with the US in the 1980s, heightened by Japan's pursuit for indigenously produced (*kokusanka*) fighter-jets (FS-X program), have come down to settlements with significant compromises from both sides. While the US's 'Japan Bashing' of the 1980s pressured Japan to forego its original plan to produce indigenous fighter-jets, both sides came down to an agreement, wherein Japan would

[39] Keisuke Nakanishi in meeting with the US Defense Secretary Les Aspin, September 27, 1993. See also, Yoo, Hyon Joo (2012).

acquire modified version of the US Lockheed Martin's (formerly General Dynamics) F-16C in return for technology transfers. The 1980s contestations in between the two allies have been important juncture in situating Japanese policy leaders to recognize the values of joint development programs with the US. As early as in February 1990, for instance, the Mitsubishi Heavy Industries (MHI) chairman commented that "Japan should no longer try to force kokusanka of projects when the United States has a competitive system or one for joint development" (Koku Shinbunsha Wuingu 1991). Another Japanese defense firm personnel also stated in 1991 that "Whether this new era brings domestic development or international joint development does not matter; what matters is the capability of development itself" (Koku Shinbunsha Wuingu 1991). The 1995 statement by Keidanren Defense Production Committee – the association of Japan's defense industry – further reflects such general consensus forged among Japanese policy leaders as the statement in setting out the roadmap of Japan's armaments called for the need to "maintain and enhance the defense production and technology base" by "mak[ing] it possible to undertake joint R&D and production with the United States, with which Japan has close ties in security matters" (Keidanren 1995). Although full-fledged kokusanka has been compromised, Japanese policy leaders have newly converged on how joint ventures in arms procurement with the US enable Japan's self-reliant armaments in the latest state-of-the-art weapons system.

The second phase of Japan's BMD acquisitions can be traced from North Korea's Taepodong-launch in 1998. By 1997, Japan has stationed over 120 PAC-2

missiles (IISS 1997). Coupled with growing concerns on China's military advancements, which have shown about 96.3 percent increase in defense budget from 1990-2000, exceeding that of Russia by 1997 and Japan by 2001, Japan announced its decision in 2003 to acquire autonomous multi-tier BMD system including the ground-based PAC-3 for lower-tier and ship-based SM-3 Block II for upper tier defense (Japan Ministry of Defense 2017: 327; Mizokami 2017; Takahashi 2012: 7). The BMD acquisition plans begins to appear for the first time as the first component of Japanese Ministry of Defense's annual releases on "Defense Programs and Budget of Japan" from FY2004 to FY2007 (Japan Ministry of Defense 2004; 2005; 2006; 2007).

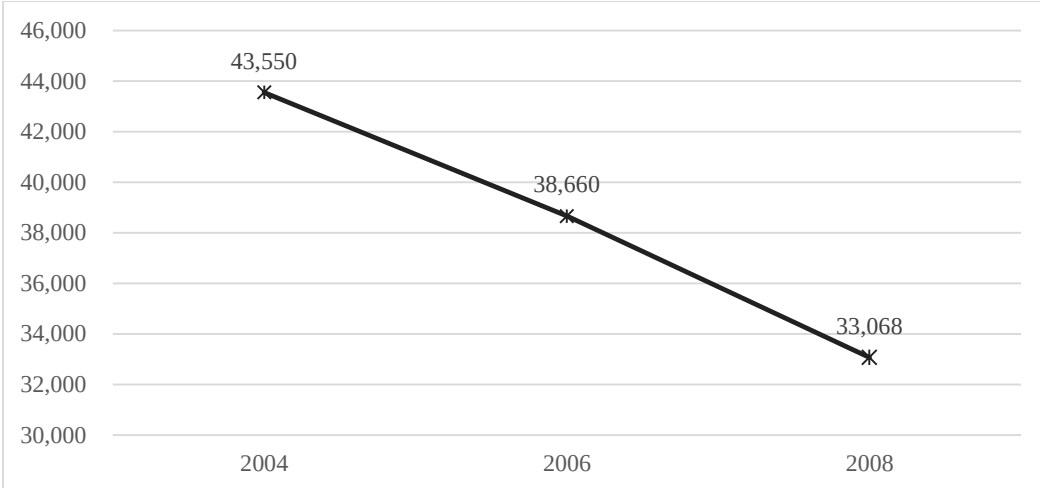
Although Japanese policy leaders have spat over the cost of the BMD system and also institutional and constitutional constraints arising from the concerns that Japan's BMD system will violate the Peace Constitution and 1969 Diet resolution, which forbid Japan's involvement in collective self-defense or military use of outer space, respectively, North Korea's Taepodong-launch in 1998 curtailed much of the debate. Following immediately after the launch, in August 1998, Japanese government further allocated thirteen million US dollars for joint TMD research and announced to join the joint research and development program for BMD technology with the US (Cronin 2002).[40]

Japan's armaments in the BMD have continued to alternate along North

[40] Statement of the Chief Cabinet Secretary, Japan-US Joint Technological Research on Ballistic Missile Defense, December 25, 1998.

Korea's asymmetric military provocations as North Korea resumed to consecutive ballistic missile tests and launched its first underground nuclear test in October 2006. Also North Korea's military tests came within the context in which the US in response to 9/11 was deeply engaged in the Middle East, relocating their overseas military personnel including the USFJ. The US's announcement of the GPR in 2004 further signaled repositioning of the US's bases and reduction in the US's overseas presence, Figure 10. In face of such threat imminence from North Korea's asymmetric capabilities and transformations in the alliances, Japan expedited its original plans for acquiring autonomous BMD capabilities. Also since 2006, as notably "enthusiastic partner" for US's BMD architecture in East Asia (Roehrig 2017), Japan welcomed US's deployment of BMD assets including the PAC-3, X-band radar, aegis destroyers equipped with SM-3s (Ministry of Foreign Affairs of Japan 2006). By 2007, just a year after South Korea's acquisition of second-hand PAC-2s from Germany, Japan began to field its first batch of PAC-3 and launched its first test-flight of SM-3 on their aegis destroyers (Japan Ministry of Defense 2008: 11). Set upon symmetric grounds for alliance structure and arms transactions, the US provided license production for PAC-3 systems and granted sales of the SM-3 as their first foreign sale to Japan (Hoff 2015).

Figure 10 US Forces Japan (USFJ), Number of Military Personnel



Source: IISS, *The Military Balance*, annual series.

The third phase in Japan's BMD armaments spiraled off within more diverse dimensions and sources of asymmetric threats in the region. North Korea under the latest Kim Jong-un regime (2011-present) embarked upon successive nuclear tests and test-firings of longer-range ICBMs and submarine-launched ballistic missiles (SLBMs),[41] including the ICBM-type Hwasong-12 (KN-17), Hwasong-14 (KN-20), and SLBM-type Pukkuksong-1 (KN-11), as well as the sixth nuclear test (supposedly hydrogen bomb) of the largest magnitude to this date on September 3, 2017 (100-120kt).[42] As North Korea for the first time officially alleged to have finally succeeded in test-launching of the ICBM-type Hwasong-15 (KN-22) on November

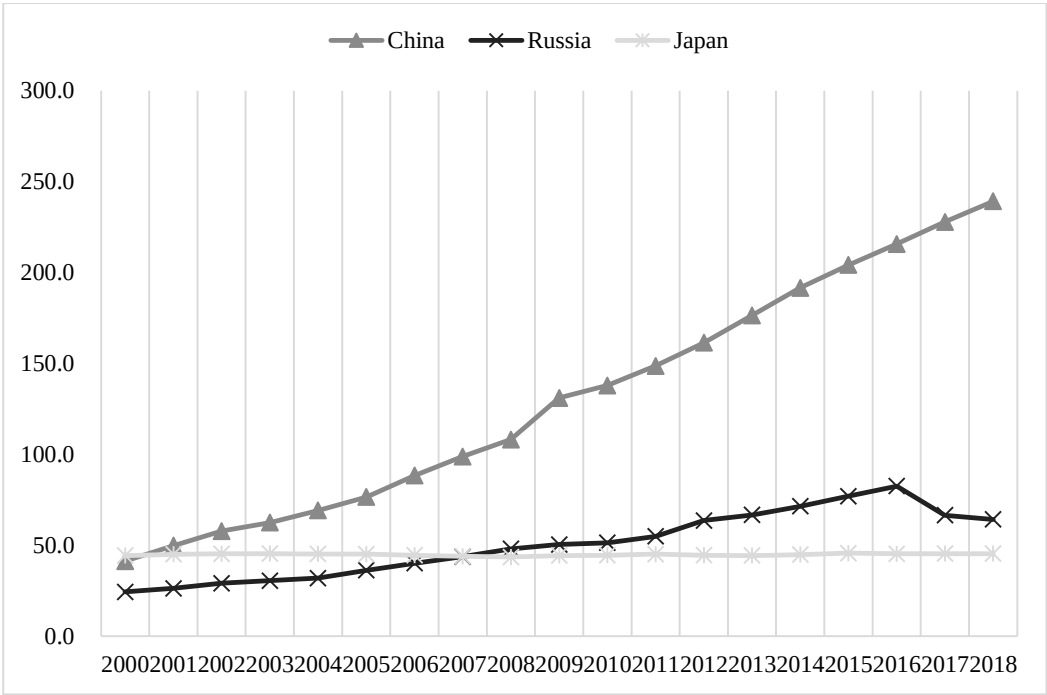
[41] The two main pillars of the so-called "nuclear triad [(ICBM, SLBM, and bombers)]" advanced delivery systems for nuclear warheads, See US Office of the Deputy Assistant to the Secretary of Defense for Nuclear Matters (2010).

[42] Estimates of North Korea's nuclear arsenal vary. 2015 report listed about ten to sixteen weapons from spent fuels acquired from the Yongbyon reactor and uranium enrichment facilities. See Joel Wit and Sun Young Ahn (2015); see also 2016 estimate of about thirteen to twenty-one by David Albright and Serena Kelleher-Vergantini (2016).

29, 2017, North Korea emerged as a de facto nuclear weapons state with capability to target distances of up to approximately 13,000km – placing all of the US mainland for the first time within North Korea's target ranges.

Aside from North Korea's emergence as de facto nuclear power by the 2010s, Russia and China, the two formally recognized nuclear weapons states, have also resurged with accelerated modernization of their ballistic missile capabilities. With inventories of 6,490 and 290 nuclear warheads, respectively (Davenport and Reif 2019), China's military resurgence since the 2000s, in particular, has accompanied with about 1,038 percent growth from 1990-2018, about 480 percent increases from 2000-2018, growing as the largest arms spending country in the region. As of 2018, China spends about five times over Japan. Russia, mired into territorial disputes with Japan over the Kuril Islands, has also gradually resurged in defense expenditures, exceeding that of Japan by 2008, Figure 11. As highlighted by China's ongoing development of the new ICBM-variant, Dong Feng-41 (DF-41), anticipated to reach the US in thirty minutes upon launch, the exponential growth in military budget followed with advancements in ballistic missile capabilities. Russia, with RS-28, "Sarmat," is reportedly to become capable of the world's largest nuclear-tipped ICBM when it goes into production as expected by 2021 (Fisher and Ronay 2019).

Figure 11 Military Expenditures by Japan, China, Russia (2000-2018), in US$ billion



Source: SIPRI, Military Expenditure Database.

While the source of asymmetric threats became more diverse in the 2010s, (elaborate on force structure – SM-3, PAC-3): With the outbreak of the Global Financial Crisis in 2008, the hegemonic foundations of the US that seemed unsurmountable in the so-called their "unipolar moment" began to be seriously challenged for the first time since the collapse of the Soviet Union. Although projections remain debated (Nye 2011; Brezezinski 2012; Layne 2009), increasing contestations to American primacy clearly had significant repercussions to the US allies in Northeast Asian region including Japan and South Korea that rested on the US's security commitment and provision of extended deterrence in pursuit for security (Nye 2010; Pempel 2010). Becoming a "watershed" (Zhao 2019) moment,

"new era" (Wang 2018) of the US-China rivalry (Friedberg 2011), the growing presence of Chinese naval and air forces in the regional waters and air, tested the resilience of whether the US will come to defense of the allies in Asia in case of real military contingencies in the region. While the US rebalanced to Asia since 2011 (Clinton 2011), revamping the forward-deployed forces in Asia including the USFJ forces back to the level of 40,000 military personnel by 2012,[43] the US government's 2013 budget sequestration made the US's pivot to Asia at unease. Placed in this context, Japan's selection of the US's state-of-the-art weapons system in the 2010s including not only the BMDs but also big ticket items like the F-35s have been "welcome[d]" by the US (Global Times 2014), under which Japan was able to enhance its own military capabilities, interoperability between the US and Japan forces, while setting out for the new US-Japan Defense Guidelines in 2015. With continued "signal to Washington that Tokyo is willing to invest more in compatible and interoperable equipment" (Lee 2015), especially under the Abe cabinet, the horizontal arms transactions in the US-Japan relations thickened, reciprocating into the US's provision of technology and budget for joint development of enhanced SM-3 Block IIA by the 2010s (Japan Ministry of Defense 2016; Hoff 2015: 5).

Building upon symmetric alliance force structure and transactions in the state-of-the-art BMD, and transformations in asymmetric threats, Japan, as of 2018, has accumulated to multi-tier BMD capabilities ranging from the PAC-2 and PAC-3

[43] Former Secretary of Defense Leon Panetta stated that the US will keep sixty percent of overseas naval assets in Asia including the Pacific Fleet, which alone comprises of 180 ships and submarines, 1,500 aircraft, and 100,000 personnel.

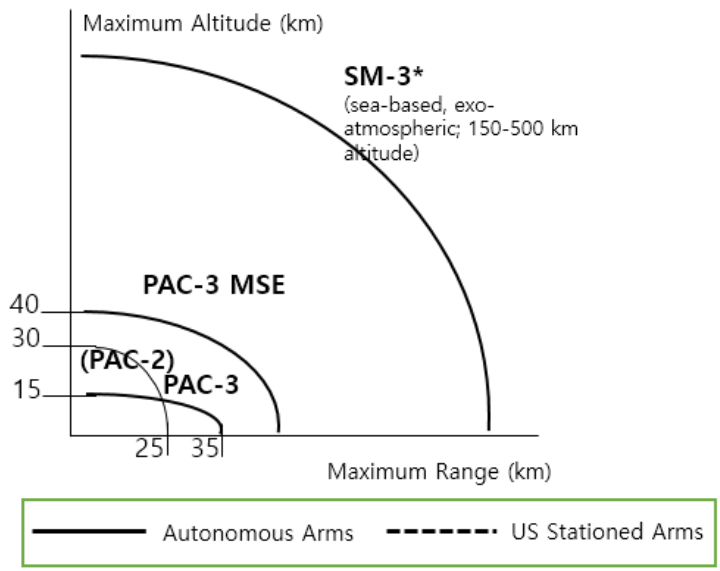
on ground, as well as the two sea-based Atago-class aegis destroyers equipped with SM-2 interceptors, and four Kongo-class aegis destroyers (Kongo, Chokai, Myoko, and Kirishima) with SM-2 and SM-3, Figure 12. Beginning with the first successful test-launch of SM-3 in December 2007 – first country other than US to succeed in the test – Japan completed deployment of all Kongo-class aegis destroyers with the SM-3 Block IAs by April 2011, as originally planned (Yamaguchi 2013).

Although Democratic Party of Japan (DPJ) for the first time assumed office since 2009 for three years until 2012, Japanese policy leaders' threat perception and arms acquisitions have remained in continuum. Key empirical cases include, Japan's 2010 National Defense Program Guideline, announcing Japan's plan to upgrade the above two Atago-class destroyers since 2017 to be equipped with the new SM-3 Block IIA missiles jointly produced between the US and Japan (Japan Ministry of Defense 2010; NTI 2018). The US and Japan, during the talks between US Defense Secretary Leon Panetta and Japanese Defense Minister Satoshi Morimoto held on September 17, 2012, also agreed to deploy another X-band radar in Japan.[44] While the LDP came back to office following its landslide victory over the DPJ in December 2012, Lower House election, the newly issued 2014 National Defense Program Guidelines in December 2013 reconfirmed the need to maintain and enhance Japan's own BMD systems to meet the "threat of nuclear weapons" (Japan Ministry of Defense 2013).

[44] During joint press conference after the talks between US Defense Secretary Leon Panetta and Japanese Defense Minister Satoshi Morimoto.

With sea-based SM-3s, three-stage missiles to intercept short-to-intermediate-range ballistic missiles in space with a range beyond 1,000km, Japan has completed deployment of three-stage autonomous BMD system, lower-tier air defense by ground-based PAC-2s and sea-based SM-2s, interceptive PAC-3s and SM-2s, and sea-based midcourse phase upper-tier by the SM-3 variants, Figure 12.

Figure 12 Japan's BMD Capabilities



Source: Illustrated by author with data from IISS, Military Balance; Defense White Papers and Government reports; in inspiration from BMD weapons diagram by Heritage Foundation, see, Klingner (2015)

Aside from the BMD systems already in operation, Japan decided to procure two land-based Aegis Ashore batteries in December 2017. Expected to be operational by 2023, the Aegis Ashore will be ground-based version of upper-tier system, alike the sea-based SM-3s, which aims to intercept incoming missiles in the exo-atmosphere, before the re-entry of the missiles into atmosphere (Reuters 2017). Japan

is also expected to place two more maya-class aegis destroyers in service since 2020 (launched in July 2018), equipped with SM-3, as well as SM-6 interceptors, which can hit-to-kill medium-range ballistic missiles (MRBMs) and cruise missiles (Gady 2019).

Japan's incremental armaments have become complementary to the US-stationed AN/TYP-2 X-band radars (one at Shariki and another one at Kyogamisaki base), four PAC-3 batteries deployed in and around Japan, and about seven SM-3 equipped aegis ships deployed in near seas of Japan (Japan Ministry of Defense 2016; Missile Defense Advocacy Alliance 2018). The increasing asymmetric threats and symmetricity in US-Japan alliance force structure largely shaped Japan's armaments in the BMD. Relative domestic consensus on threat perception and self-reliant arms acquisition in strategic utilization of joint development programs with the US have further reinforced Japan's active armaments in the BMD.

Self-reliant Arms Acquisition Policy for ISR under Symmetric Alliance

Determined by the transformations in the external structural environment described above, this study finds that Japan's active armaments in major ISR weapons systems have been further induced by the domestic policy leaders' repeated engagement with the US in pursuing its self-reliant arms acquisitions. Namely, the AN/SPY radars equipped on Japan's six aegis destroyers, as of 2018, have been the critical technological corollaries of Japan's sea-based SM-2 and SM-3 BMD acquisitions. The multi-function phased-array radars, AN/SPY-1D on Kongo-class aegis

destroyers and AN/SPY-1D(v) on Atago-class aegis destroyers, providing detection of multiple targets beyond 320 kilometers are the "heart" of the aegis weapons system per se that centralize and automate the command-and-control (C2) and weapons control system on the destroyers including the SM-2 and SM-3 interceptors (US Navy 2019). While procured as set of the BMD systems, the aegis combat system and AN/SPY radars equipped on the six destroyers (eight by 2020) have become important pillars of Japan's autonomous ISR capabilities at sea. The capability for simultaneous detection and decision to launch the weapons system enables detection and interception against diverse targets on sea and ground, including submarines, ships, cruise missiles, and others that are not restricted to ballistic missiles. Under close coordination and interoperability with the US forces, Japan's armaments have been jointly funded by the US and Japanese governments, including the latest Aegis Baseline 9/BMD 5.1 equipped to the Atago-class destroyers.

As Japan's budget allocation for FY2004 first set out major investments in the BMD armaments, including the PAC-3 and SM-3, the budget plan also included upgrading the existing ground-based radar sites along the perimeters of Japan's mainland – Japan Aerospace Defense Ground Environment (JADGE) – as the means to revamp Japan's overall monitoring, early warning, and defense against increasing ballistic, maritime, and air threats in the region (Japan Ministry of Defense 2004). At times of the US's troop reduction in Asia to focus on their war in the Middle East, Japan's increases in autonomous radar capabilities were more than welcomed as

"useful redundancy" to the US's forces in the region.[45] As Japan and the US established the Bilateral Joint Operation Coordination Center at the Yokota Air Base in October 2005, as well as the Joint Tactical Ground Station at Misawa airbase in January 2008, Japan's armaments under the confines of the horizontal, joint, interoperable BMD architecture facilitated Japan's arms build-up in the ISR capabilities.

The JADGE, to elaborate, in addition to the US-stationed AN/TPY-2 X-band radars at Shariki and Kyogamisaki bases, are known to provide "full coverage of the Japanese Islands" (Simpson 2011) as the radar systems located along twenty-eight sites are integrated under computerized information and network. Although the full detection range and details of newly added radar systems remain undisclosed, Japanese government has incrementally allocated defense budget to upgrade these J/FPS radar systems to enhanced versions – the J/FPS-3 and FPS-5 – since the decision to acquire BMD capabilities in 2003. Seven sites are now reportedly equipped with J/FPS-3A, providing detection range of around 370km in length and 150km in height; six sites with enhanced versions of J/FPS-4; five sites with J/FPS-5; and four sites with older radar systems including AN/FPS-20 and AN/FPS-6 radars, Table 7.

[45] US Deputy Commander of the Space & Missile Defense Command, General John Seward, January 2008.

Table 7 Japan Aerospace Defense Ground Environment (JADGE)

ASDF Northern Air Defense Force - Northern Aircraft Control and Warning (AC&W) Wing	
Unit/Location	**Radars**
18th AC&W Sq. Wakkanai Sub-base	J/FPS-2
28th AC&W Sq. Abashiri Sub-base	J/FPS-4
26th AC&W Sq. Nemuro Sub-base	J/FPS-2
45th AC&W Group. Tobetsu Sub-base	J/FPS-3A
36th AC&W Sq. Emori Sub-base	AN/FPS-20; AN/FPS-6
42nd AC&W Group. Ominato Sub-base	J/FPS-5
37th AC&W Sq. Yamada Sub-base	J/FPS-2
33rd AC&W Sq. Kamo Sub-base	J/FPS-3A
29th AC&W Sq. Okushirijima Sub-base	J/FPS-4
ASDF Central Air Defense Force - Central AC&W Wing	
Unit/Location	**Type**
27th AC&W Group. Otakineyama Sub-base	J/FPS-3A
46th AC&W Sq. Sado Sub-base	J/FPS-5
44th AC&W Sq. Mineokayama Sub-base	J/FPS-4
23rd AC&W Group Wajima Sub-base	J/FPS-3A
22nd AC&W Sq. Omaezaki Sub-base	J/FPS-2
35th AC&W Sq. Kyogamisaki Sub-base	J/FPS-3A
1st AC&W Group Kasatoriyama Sub-base	J/FPS-3A
5th AC&W Sq. Kushimoto Sub-base	AN/FPS-20; AN/FPS-6
ASDF Western Air Defense Force - Western AC&W Wing	
Unit/Location	**Type**
7th AC&W Sq. Takaoyama Sub-base	J/FPS-4
17th AC&W Sq. Mishima Sub-base	J/FPS-2
19th AC&W Sq. Unijima Sub-base	J/FPS-2
43rd AC&W Group Seburiyama Sub-base	J/FPS-3A
15th AC&W Sq. Fukuejima Sub-base	J/FPS-4
9th AC&W Sq. Shimokoshikijima Sub-base	J/FPS-5
13th AC&W Group Takahatayama Sub-base	AN/FPS-20; AN/FPS-6
ASDF Southwestern Composite Air Defense Division - Southwestern Composite AC&W Wing	
Unit/Location	**Type**
7th AC&W Sq. Takaoyama Sub-base	J/FPS-4

Source: Simpson (2011).

The aegis destroyers and ground-based radar systems (JADGE) are further enhanced through the interlinkage with Japan's autonomous military (although formally termed 'multipurpose') IGS satellites, which were first initiated in the late 1990s for development in response to North Korea's Taepodong-launch in 1998.[46] Beginning with the first two IGS satellites – IGS-Optical 1 and IGS-Radar 1 – launched in March 2003, Japan further replaced the optical satellite with the IGS-Optical 2 in September 2006. Enhanced versions of IGS-Optical 3V and IGS-Radar 2 were launched in February 2007. Second-generation of optical satellites IGS-Optical 3 and IGS-Optical-4 were launched in November 2009 and September 2011, respectively, followed by IGS-Radar 3 and IGS-Radar 4 in December 2011 and January 2013. Additional IGS-Radar 5 has been deployed in March 2017 (second-generation). The third-generation of IGS satellites came with the launch in March 2015 (IGS-Optical 5), followed by the IGS-Optical 6 in February 2018 and Synthetic Aperture Radar (SAR) equipped IGS-Radar 6 in June 2018. Administered under the Japan Aerospace Exploration Agency (JAXA) and Cabinet Satellite Intelligence Center (CSICE) of Japan's intelligence agency, the Cabinet Intelligence and Research Office (Naicho), Japan currently operates five radar satellites (four second-generation IGS-radar 2-5 and one third generation IGS-radar 6) and three optical satellites (two second-generation IGS-optical 4-5 and one third generation IGS-optical 6). The IGS-6 series now provide high-resolution images for both national security and disaster monitoring to the cabinet, with imaging capabilities from

[46] Initially began with the plan to acquire two optical and two radar satellites.

resolution of forty centimeters (third-generation IGS-optical radars) to one meter range (second-generation IGS-optical radars), Table 8 (Spacetech 2018; Graham 2018).

Table 8 Japan's Military Satellites in Operation, as of 2018

Satellites*	Type	Range (approx.)	Launch Date
IGS-4 Optical	Optical (Second generation)	60cm	2011
IGS-5 Optical	Optical (Third generation)	30-40cm	2015
IGS-6 Optical	Optical (Third generation)	30-40cm	2018
IGS-2 Radar	Radar (Second generation)	1m	2007
IGS-3 Radar	Radar (Second generation)	1m	2011
IGS-4 Radar	Radar (Second generation)	1m	2013
IGS-5 Radar	Radar (Second generation)	50cm	2017
IGS-6 Radar	Radar (Third generation)		2018

Source: In reference to Spacetech (2018); Graham (2018)
*Note: Japanese government designations are used, which are different from the designations used by North American Aerospace Defense Command (NORAD)

Although the acquisition process has seen stagnations and difficulties at times with technical failures and ending of services earlier than planned lifespans, North Korea's nuclear and ballistic missile arsenal and China's increasing maritime activities in the region have pushed Japan to continue the development program. The plans to procure enhanced versions of IGS satellites were first introduced in 2009 in the midst of increasing US-China rivalry and faltering of the US's presence in Northeast Asia following the Global Financial Crisis in 2008. For FY2009, Japan

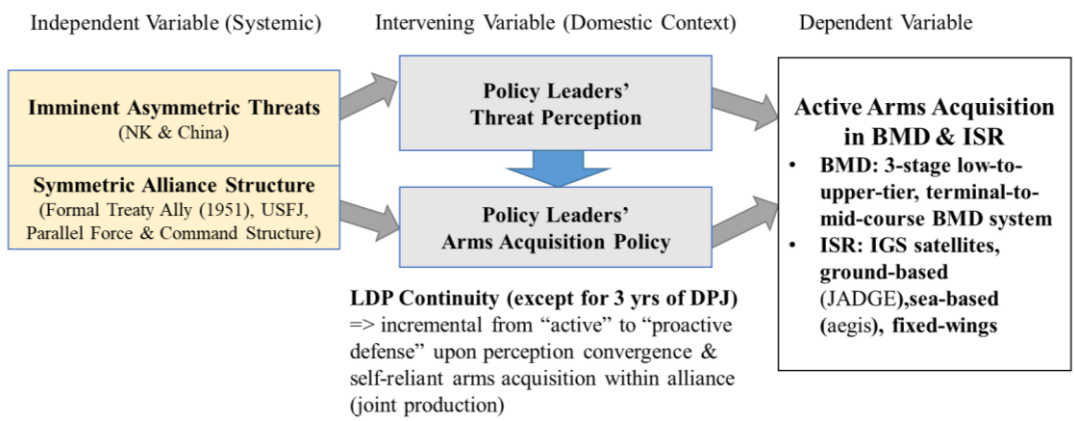
placed 6.8 billion yen to fund the program. Again, the acquisition progress unfolded with Japan's pursuit for armaments under the bilateral alliance framework with the US, wherein the alliance-cooperative efforts and emphasis on imminence of security threats overshadowed the thorny issues surrounding Japan's Peace Constitution and 1969 Diet resolution, which banned Japan's use of outer space to only peaceful purposes. The second term of Abe Cabinet, in particular, as stated in the National Security Strategy released in December 2013, called for integrating Japan's space policy under close coordination with the US. The US and Japan in putting forth new joint defense guidelines in April 2015, agreed to promote "seamless" cooperation in boosting Japan's space capabilities in complementary to the US-Japan Security Alliance. The reinterpretation of the Peace Constitution in September 2015 further enabled joint use of the space forces for collective self-defense purposes. Ultimately, the Revised Basic Plan, which came after report submitted by the Space Policy Commission to Prime Minster Abe on November 11, 2014, set out to "strengthen" Japan's ISR capabilities by expanding the number of IGS satellites. The report recommended "doubling" the number of IGS to eight satellites and two more spare satellites for relay operation in the orbit (Kallender-Umezu 2015).

Japan also operates diverse equipment in air ranging from four F-4 modified reconnaissance fighter-jets RF-4J (RF-4E Phantom II) and four electronic intelligence (ELINT) YS-11EB aircrafts; thirteen signals intelligence (SIGINT) E-2C Hawkeye aircrafts and four E-767 airborne early warning and control (AEW&C) aircrafts; forty-four helicopters with ISR capabilities (OH-6D); as well as one

Kawasaki EC-1 and two YS-1EA aircrafts that are equipped with electronic warfare (EW) capabilities that can jam enemies' radar and radio systems on flight. Diverse range of ISR capabilities procured in response to increasing asymmetric threats in the region and strengthening of alliance cooperation in self-reliant armaments now function in complementary to the USFJ's AN/TPY X-band radar at Shariki and another one at Kyogamisaki base, the five E-2D Hawkeye AEW&C aircrafts, two E-3B Sentry airborne early warning (AEW) aircrafts, one RC-135 Rivet Joint ISR aircraft, and five high-altitude RQ-4A Global Hawks (IISS 2018).

Japan has shown active, "step-ahead" (Ko Bong-Jun 2008: 402-404) arms acquisitions in both the BMD and ISR capabilities. In addition to the external stimuli, policy leaders' heightened threat perception upon security junctures including North Korea's ballistic missile and nuclear tests and China's military contestations in the region, led to active armaments in the BMD and ISR, Figure 13.

Figure 13 Japan's Active Armaments in the BMD & ISR



Also Japan utilized joint arms production initiatives as the means to expand its self-reliant armaments and enhance its competitive military edge under the bilateral alliance with the US. While the heavy sunk costs and high technological barriers in sensitive BMD and ISR capabilities proved cooperation with the US vital to the US allies' access to the weapons system per se, the symmetricity accumulated from the past joint production programs since the 1980s situated Japan more favorable to join the US-led BMD initiatives. The structural constraints arising from the US's export control on the latest weapons systems have been alleviated as Japan's activism in joint production and arms build-up in complementary military capabilities since the 2000s dovetailed with the US's need to stretch over to the Middle East, while check-balancing against North Korea and China's increasing military assertiveness in the region. Especially after the 2008 Global Financial Crisis, which aggravated the long cycles of defense budget cuts by the US's major allies in Europe including the UK, the joint initiatives in arms production and technology advancements with Japan have been more than welcomed by the US government and their defense industries. While the critics of incumbent Prime Minister Shinzo Abe call the cabinet's lifting of the ban on Japan's arms exports by replacing the 1967 Three Principles of Arms Exports (TPAE) and reinterpretation of Peace Constitution (Article 9) to allow Japan's right of collective self-defense as Abe's "stealth" revisionist efforts to remilitarize Japan (Reuters 2013), changes in Japan's security posture and approach to armaments including the BMD and ISR realms have been indeed incremental since the 1990s in response to such systemic imperatives from

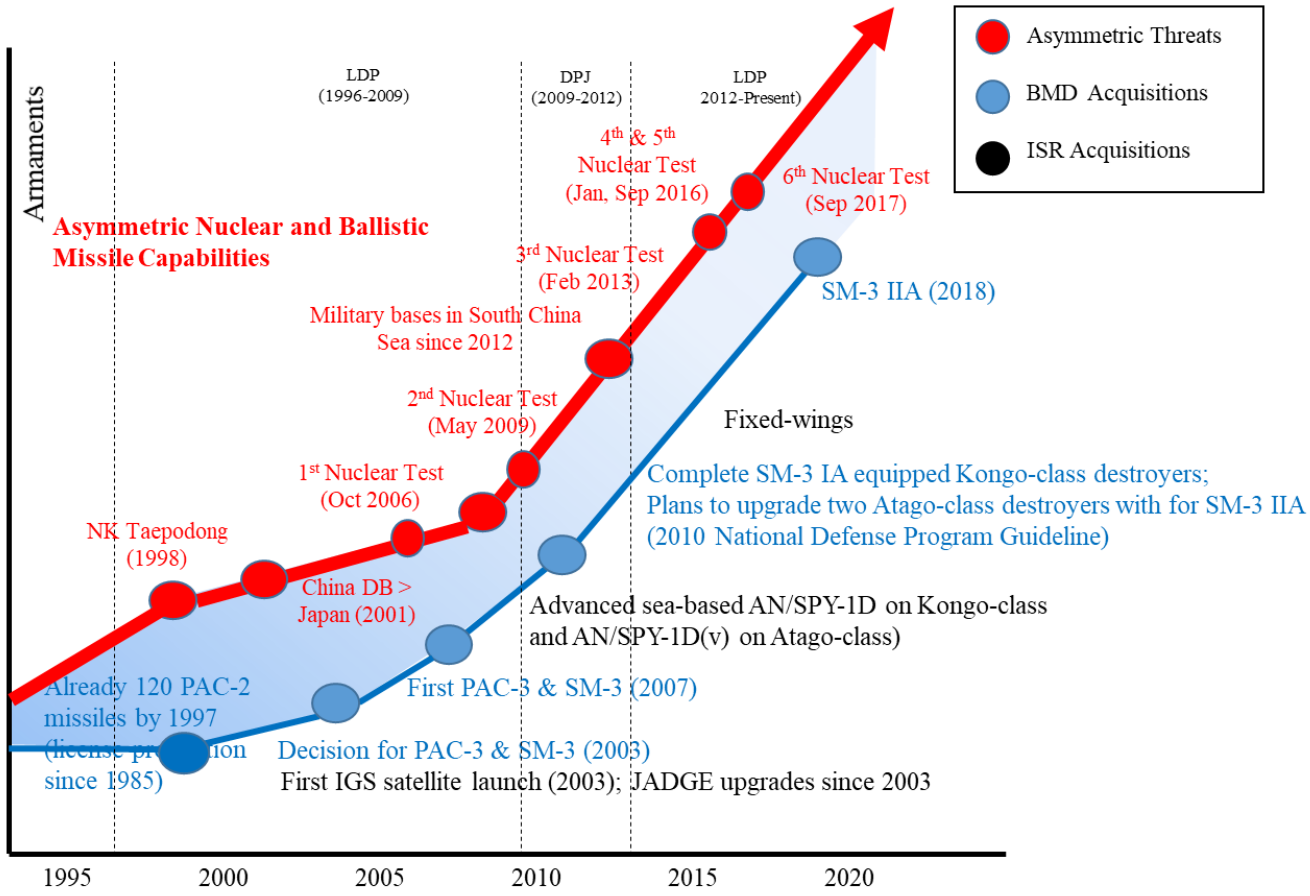
their external settings (Park Cheol Hee 2014; 2016; Park Young-june 2014; Arase 2007), Table 9, Figure 14.

Table 9 Japan's Active Armaments in the BMD & ISR Capabilities

Weapons		Details
BMD	US	PAC-3, PAC-3 MSE
	Japan	**Three-stage, mid-to-terminal phase, BMD System** PAC-2, PAC-3, SM-2, SM-3 variants
Satellites	US	Keyhole (KH) Satellites, Defense Support Program (DSP) Satellites, SBIRS (Space-based Infrared System)
	Japan	**IGS (Information Gathering Satellites)**
Recon. Aircrafts	US	**Advanced**
		RC-135, E-3B Sentry (Kadena Air Base), E-2D, Global Hawks
	Japan	**Mid-High Mix**
		E-767 (AWACS); E-2C, EP-3 (SIGINT); RF-4E/EJ (Reconnaissance aircrafts), YS-11EB (ELINT); OH-6D (ISR helicopters)
Radars	US	X-band Radar (AN/TPY-2), Aegis (AN/SPY-1D)
	Japan	**Nation-wide Scope**
		Aegis destroyers (AN/SPY-1D variants); JADGE (nationwide)

Source: Listed by author in reference to official reports, IISS Military Database, and SIPRI Database.

Figure 14 Summary: Japan's BMD and ISR Acquisitions



Source: Illustrated by author.

(2) Restrained Arms Acquisition for Symbolical Capability Aggregation: Taiwan

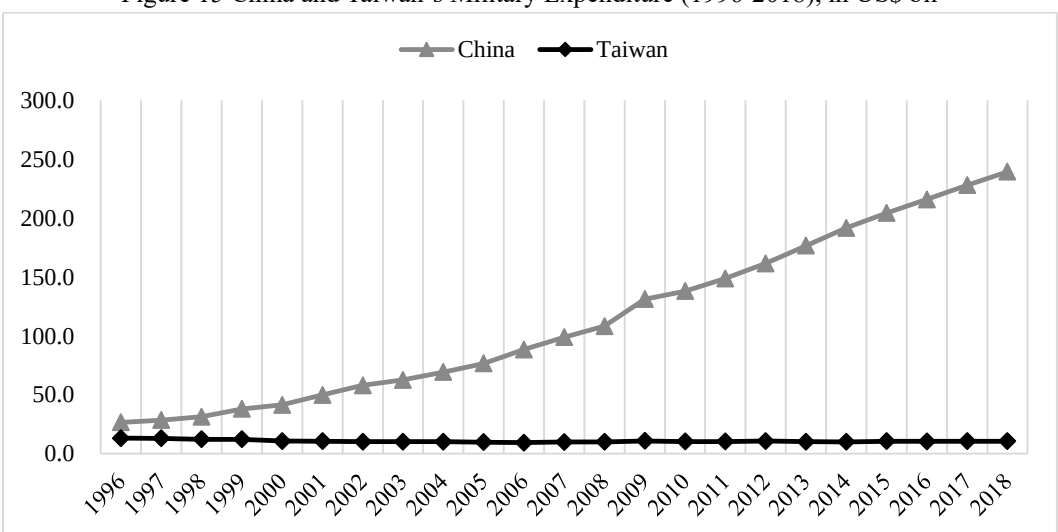
As much as South Korea's national security decision-making has long anchored on North Korean threats since the division of Korean Peninsula in 1945, Taiwanese policy leaders have shaped the foundation of their security posture in defense against the mainland China since its separation into disparate political entities in 1949. While China's outright claims for Taiwan as integral part of China (One China policy) have seen ebb and flow over time, China's rapid military resurgence in the post-Cold War era accompanied both asymmetric and conventional arms build-up that seriously challenged Taiwanese defense posture across the Strait.

While the extravagant cost of BMD and ISR capabilities have been no less contested within the Taiwanese government, China's drastic outspending in military expenditures and boost in asymmetric capabilities since the 1990s have incrementally constructed a consensus that Taiwanese should pursue, although limited to selective areas, self-reliant armaments in the BMD and ISR capabilities as symbolical countermeasures. The 1995/1996 Taiwan Strait crisis, in particular, has been the critical juncture in Taiwanese armaments, during which China test-fired ballistic missiles in nearby of Taiwan's main harbors and launched military exercises in the East China Sea.

China's annual double-digit growth in military expenditures, display of high-end weapons systems, and continued refusal to rule out the possibility of

Beijing's use of military force against Taiwan have further contributed in escalating the threat level imposed from China. In terms of military expenditures, as Figure 15 illustrates, the gap between China and Taiwan has seen exponential growth, China spending about twofold ($21 billion) of Taiwan ($11.7 billion) in 1990, China began to spend about four times more ($41.3 billion) by 2000, accumulating to about fifteen times disparity in total defense budget by 2017 (China: $154.3 billion, Taiwan: $10.4 billion). In 2018, Taiwan's defense budget is $10 billion. China's is $154 billion. The disparity in bulk of spending on armaments, which excludes personnel and force operating costs from total military expenditures, has been far more profound, China spending about twenty-three times more worth of armaments than Taiwan by 2017, Table 10.

Figure 15 China and Taiwan's Military Expenditure (1996-2018), in US$ bil



Source: SIPRI, Military Expenditure Database.

Table 10 China and Taiwan's Military Expenditures and Armaments (2010-2017) in US$ bil

Year	Total Military Expenditure			Arms Procurement Only		
	China (A)	Taiwan (B)	A/B	China (C)	Taiwan (D)	C/D
2010	78.8	9.3	8.5	26.2	**2.6**	**10.1**
2011	93.3	9.72	9.7	31.9	**2.7**	**11.8**
2012	106.0	10.3	10.3	38.1	**2.8**	**13.6**
2013	119.6	10.3	11.6	43.7	**2.7**	**16.2**
2014	134.9	10.1	13.4	52.7	**2.8**	**18.8**
2015	146	10.3	14.2	58.7	**3.2**	**18.3**
2016	147.0	9.9	14.8	60.7	**3.0**	**20.2**
2017	154.3	10.4	14.8	63.4	**2.8**	**22.6**

Source: China's 2019 Defense White Paper; IISS, Military Balance, Annual series; Ministry of National Defense, National Defense Report, annual series.

Upon China's military aggrandizement, the sheer gap in cross-strait military balance has become far more drastic. In the realms of conventional capabilities, by 2018, China has accrued to 1,490 fighter-jets, 240 ships, fifty-two submarines, and about a million of active duty soldiers in the People's Liberation Army (US Office of the Secretary of Defense 2018). Taiwan remained limited to 420 fighter-jets, twenty-three ships, two modern attack submarines, about 140,000 ground troops. In this backdrop, China's rapid modernization of asymmetric ballistic missiles and cruise missiles have posed far more imminent threats to Taiwan, especially in regards to China's deployment of about 300-350 short- to medium-range ballistic missiles directly across the Taiwan Strait, in Fujian province of China, Table 11.

Table 11 China's Inventories of Missiles

Missile Type	Range (km)	Number in Inventory			
		1996	2003	2010	2017
SRMBs					
DF-11	280-350	Small	175	700-750	~1,200
DF-11A	350				
DF-15	600		160	350-400	
DF-15A	600				
DF-15B	800				
MRBMs					
DF-21C	2,500	0	0	36-72	108-274
DF-16	800-1,000	0	0	0	
IRBMs	5,000	0	0	0	Possible
Cruise Missiles					
DH-10	1,500-2,000	0	0	200-500	400-1,250
ALCM	3,300	0	0	Inventory	

Source: Jane's Strategic Weapons Systems Database; IISS, The Military Balance, annual series; US Office of the Secretary of Defense, Annual Report to Congress: Military and Security Developments Involving the People's Republic of China, Washington DC, annual series.

Given the cross-strait military imbalance that seems "hopeless" in both conventional and asymmetric capabilities, as Drew Thompson (2018) put, Taiwan's major deterrence against China has rested on its asymmetric alliance with the US. Indeed, it is generally viewed that the threat of US intervention in event of Chinese military invasion may be the only credible and the most critical deterrence against China.

The asymmetry in the US-ROC relations has remained profound, particularly as Taiwan lacks formal treaty alliance with the US. As the 1954 Mutual

Defense Treaty agreement[47] ended with the US's normalization of diplomatic relations with China in 1979, the US no longer maintains military presence on Taiwan. Although the 1979 Taiwan Relations Act (TRA) was enacted by the US congress in replacement of Mutual Defense Treaty, which stipulated the US to maintain its ability to defend Taiwan and provide necessary "arms of a defensive character,"[48] the domestic legislation (US) included neither of the stationing of US troops nor formal military plans and coordination in times of contingency. Given the nonbinding nature of the act, the escalations in cross-strait tensions have made Taiwan heavily dependent on the US administration's official announcements, reconfirming the US's support for Taiwanese security, and ad-hoc dispatch of naval forces in the region. Taiwan's asymmetric reliance on the US, differently put, rested on what Steven M. Goldstein and Randall Schriver (2001) put "uncertain relationship" upon the TRA.

The asymmetric alliance also rested on the US's strict export control on armaments, particularly in the 2000s, as the US became more reluctant in delivery of arms as China became more assertive against the US's arms sales to Taiwan. Although the TRA stated the US's continued commitment in making "available" the provision of "defense articles and defense services… necessary to enable Taiwan to maintain a sufficient self-defense capability,"[49] the US's increasing "inconsistency" (Hickey 2013) and strategic ambiguity in dealing with Taiwan Strait issues have

[47] Formally, "Mutual Defense Treaty between the United States of America and the Republic of China."
[48] Taiwan Relations Act (TRA), Pub.L. 96–8, 93 Stat. 14, enacted April 10, 1979; H.R. 2479
[49] Taiwan Relations Act, Section 3(a).

indeed prevented Taiwan's access to arms purchases. Especially since the 1982 US-China Joint Communique, the US government mandated that it will not "carry out a long term policy arms sales to Taiwan and will not exceed, in either qualitative or in quantitative terms, the level of those supplied in recent years since the establishment of the relations between the US and China."[50] While the US has granted the sales of excess defense articles and other "more obvious" defensive weapons systems, the US has been rigid in sales of for instance warships, fighter-jets, and armored vehicles to manage their strategic rivalry and tensions in the US-China relations.

Restrained but Symbolical Armaments in the BMD and ISR

While China's drastic outspending in defense budget, nuclear and ballistic missiles armaments, and asymmetric relations with the US have left both qualitative and quantitative military balancing by Taiwan at dismay, Taiwanese government's relative convergence on the threat imminence from China and emphasis on self-reliant armaments have pushed the Taiwanese government to not forego their armaments in autonomous BMD and ISR capabilities.

With the political schism on One China Policy within Taiwanese domestic politics, Taiwan's security strategies and emphasis on armaments have indeed alternated as the power transferred back and forth between the traditional Kuomintang (KMT) to new Democratic Progressive Party (DPP) in leadership. The KMT, as President Ma Ying-jeou's (2008-2016) three-no policy represents, inclined

[50] US-China Joint Communique, August 17, 1982.

to pursue relative moderation or defensive nature of armaments. While the KMT maintains the One China policy in which Taiwan (Republic of China) is considered as the sole legitimate government, the strategic priorities have lied in namely seeking no unification, no independence, no use of force (Cossa 2008). In contrast, DPP's leadership has emerged as an alternative, recognizing China and Taiwan as two separate sovereign nations. In this vein, the military strategy under KMT government inclined to be more defensive in nature. As exemplary in the case of the long era of President Lee Teng-hui (1988-2000), Taiwanese government pursued the concept of "effective deterrence" as termed in the 1996 National Defense Report (Ministry of National Defense, Republic of China 1996), later defined as "defensive deterrence" in 1998 National Defense Report (Ministry of National Defense, Republic of China 1998), as sufficient than pre-emptive nature of military strategies. The DPP, in contrast, as President Chen Shui-bian (2000-2008) replaced Lee Teng-hui, has been critical of KMT's defensive posture. The Chen Shui-bian administration modified Taiwan's military strategy by reconceptualizing the previous "effective deterrence" to refer to enhancing critical air, naval, and information-based countermeasures (Chen 2009). The Chen administration also put new military doctrine of "fighting the decisive military campaign beyond the border" during a speech at the National Military Academy on June 16, 2000, calling for build-up in "high precision strikes, early warning capability and intelligence superiority."[51]

[51] President Chen Shui-bian, "Decisive Battle Outside the Territory," speech given at the Military Academy on June 16 2000.

With emphasis on counterstrike capabilities, the 2004 National Defense Report under Chen administration newly coined the term "Active Defense" (Ministry of National Defense, Republic of China 2004). Yet, when the power transferred back to KMT under President Ma Ying-jeou in 2008 (2008-2016), Taiwanese restored the previous President Lee Teng-hui's defensive interpretation of the term, "effective deterrence" (Ministry of National Defense, Republic of China 2009a; 2009b).

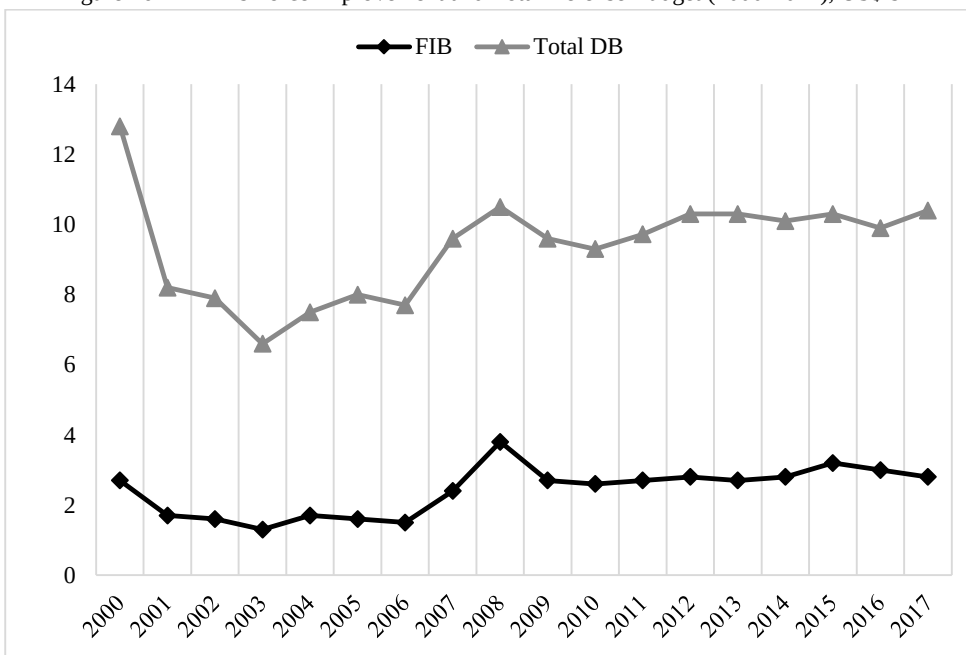
Nonetheless, although Taiwanese government's military strategies alternated in the post-Cold War era across regimes, the bottom line is that both defensive- or offensive-oriented defense strategies of the KMT and DPP leadership, respectively, converged on the existential nature of Chinese threat, that China's arms build-up is "to exercise the military option in the future." While the precise connotations of the terms such as "posture of effective deterrence," "resolute defense," "compact but delicate" and "highly capable" military capabilities alternated across regimes, Taiwanese policy leaders have concurred on threat imminence and self-reliant armaments in both the state-of-the-art, network-centric BMD and ISR capabilities. Notwithstanding China's overwhelming outspending and asymmetric relations with the US that limited Taiwanese access to necessary armaments, Taiwanese policy leaders' convergence on threat imminence has propelled Taiwan to strengthen its "prowess in information and electronic arena" (Ministry of National Defense 2002). Also, in utilization of the US's willingness to deliver arms of defensive nature, the BMD and ISR capabilities could be demanded as 'defensive' means of arms to signal Taiwanese firm commitment in its defense. The armaments in the sectors provided

the platform to seek alliance cooperation and anchor the US's interest and commitment in security of Taiwan in check-balancing China's increasing assertiveness in the region.

As the 1995/1996 Taiwan Strait crisis clearly demonstrated how China's ballistic missiles could easily penetrate Taiwan's defense system without landing on Taiwanese maritime borders, the incumbent Lee Teng-hui administration at the time rushed to procure missile defense systems from the US in tandem with launching of indigenous cruise and ballistic missile programs of its own. The heavy criticisms from then Chen-led DPP opposition party played also important role in push for the BMD.

By the 2000s, Taiwan, spending about a quarter of South Korea's arms procurement budget, fielded three PAC-2s in 1997 (Kan 2006: 12). In response to China's increased missile attacks throughout the 2000s, including the threats posed from China's launch of decapitation military exercises and operations, Taiwan under the Chen administration since May 20, 2000 (May 2000-May 2008), strived for armaments in air and ballistic missile defense, and reconnaissance capabilities. The declining force improvement budget (expenditures on military equipment) began to pick up from 2003 ($1.3 billion) reaching up to $3.8 billion in 2008, Figure 16.

Figure 16 Taiwan's Force Improvement and Total Defense Budget (2000-2017), US$ bil



Source: IISS, Military Balance, Annual series; Ministry of Defense, Defense of Japan, annual series.

Placing utmost primacy in "safeguarding national sovereignty and territorial integrity" against China, President Chen Shui-bian pledged to increase Taiwanese defense budget to the level of three percent of GDP and "demonstrate Taiwan's determination for self-defense and eliminate doubts of allied countries" by arms build-up including "three major armament procurements of Patriot PAC-3 missiles, new diesel-electric submarines, and P-3C fixed wing anti-submarine warfare aircrafts."[52] Primarily to arm against China's continued advancements in stockpiles of SRBMs, the Dong Feng varieties, as well as the short-to-medium-range DF-16s (1,000km range), and intermediate-range DF-26s (IRBM, 2,500km), Taiwanese government submitted a request for price and availability data in April 2003. In 2004,

[52] President Chen Shui-bian, see, Ministry of National Defense, Republic of China (2008: 11).

Defense Minister Lee Jye requested six PAC-3 units and upgrade of three existing PAC-2 units to the PAC-3 standard for about US$ 4.3 billion (Kan 2006: 13).

Also, in October 2002, Taiwanese government began to deliberate to approve funding for the US-origin Kidd-class destroyers. Ending in favor of the bill, Taiwan legislature approved the funding by May 30, 2003. With delivery ahead of schedule from October 2005 to 2006, Taiwanese navy since October 29, 2005, has been equipped with SM-2 launched Kidd-class destroyers.[53]

The procurement plans for Patriots systems, yet, did experienced some delays as the referendum President Chen Shui-bian placed on the Presidential election day on March 20, 2004, to acquire the missile defense systems ended with limited voter turnouts. The considerations for more "cost-effective systems" and oppositions from the ruling opposition party, KMT,[54] in lookout for more amicable relations with China turned out with less than fifty percent of ballots casted at the legislature (fifty percent is needed), blocking the bill from approval until 2008. In response, the Taiwanese government further strived to bypass by submitting the Special Budget in May 2004 (NTI 2006). Compromises were also made, requesting only the price and availability data for PAC-2 upgrades and supplemental budget at the legislature for Patriot upgrades in 2006 (Kan 2006: 14).

Nonetheless, when Ma Ying-jeou of KMT assumed office since May 20, 2008, China's increasing military provocations in the late 2000s have ultimately led

[53] Voter turnout for decision on SM-2 equipped Kidd-class detroyers: Eighteen in favor from the ruling DPP and also Taiwan Solidarity Union (TSU) and sixteen from ruling opposition party KMT, and also People's First Party (PF) in opposition. See, Kan (2006: 8).

[54] E.g. position of KMT Legislator Shuai Hua-ming, a retired army lieutenant general.

the KMT government to continue upgrading of the existing fleets of PAC-2 batteries and also put down new orders for PAC-3 hit-to-kill interceptive capabilities, as part of a $6.5 billion arms purchases from the US in 2008 (AFP 2016). Three PAC-2 batteries have been upgraded to Configuration-3 PAC-2 GEM, and signed to procure four more PAC-3s in 2009 (Missile Defense Advocacy Alliance 2018). The PAC-3 missiles have been placed to purchase in 2008 and 2010, accumulated to about 386 missiles from 2010-2013. The four PAC-3 batteries arrived in 2014-2015.[55]

China further ventured into building military bases in the South China since 2012 and increased frequency in the military activity in north and south of Taiwan to conduct military exercises in the Western Pacific. Heightening the tensions across the Taiwanese Strait, China's heavy armaments including the nuclear capable H-6K bombers have crossed into Taiwan's air-defense identification zone, reaching the record high level of frequency in transgressing over Taiwanese air space in 2017. While such increasing systemic imperative from China's military threats in the region have led Taiwan to seek advanced PAC-3 acquisitions in the 2010s, even "at the expense of other capabilities," as Michal Thim and Liao Yen-fan stated, "economics of missile defense" have become less of "primary concern" than its defense against China's asymmetric capabilities (Thim and Liao 2017). President Ma Ying-jeou indeed reconfirmed Taiwan's need to revamp its air and sea denial capabilities, first stipulated under the previous Chen administration. Resonating the Chen administration's emphasis on how China's increasing "military satellites,

[55] Defense Industry Daily database, November 2014.

technology of ballistic missile, and information warfare" are the utmost security threats to Taiwan,[56] President Ma Ying-jeou in pursuit of "resolute defense" and "credible deterrence," stated in 2013 Quadrennial Defense Review (QDR), that China's increasing presence in the region has called for arms build-up in the BMD and ISR capabilities. Taiwan currently deploys nine PAC-3 batteries, some equipped with upgraded PAC-2 GEM systems.

Taiwan's spree for armaments in the ISR capabilities emerged under President Ma Ying-jeou as well (KMT government). The AN/FPS-115 PAVE Phased Array Warning System, deliberated under President Chen Shui-bian (DPP government) as the surplus deal of Taiwan's acquisition of the earlier Patriot system in 2000, entered in service by 2013. Although the radar itself is already over forty years old since development by the US (Raytheon) and requires upgrading, the detection and early warning capabilities up to 3,000 nautical miles have provided long-range surveillance radar system (Surveillance Radar Program) in Taiwan, stationed in the northern part of Taiwan, Hsinchu County (Calvo 2018; Danielsson-Murphy 2010). The P-3Cs, which President Chen Shui-bian pledged to acquire in 2008, also began to be in service since 2015 with four units, augmenting to about twelve by 2018.[57] Taiwan also operates six E-2K (E-2T Hawkeye upgraded) AEW&C aircrafts that assist Taiwanese air force and operation of Patriot batteries. As the first arms sales agreement with the US under President Ma Ying-jeou,

[56] Defense Minister Kao Hua-chu, Ministry of National Defense, Republic of China (2002).
[57] IISS, The Military Balance, annual series.

Taiwanese government put down $250 million for upgrade of four E-2T aircraft to the Hawkeye 2000 standard, in October 2008. Equivalent to E-2C operated by the US Air Force, USFJ, and Japan's ASDF, the first two of existing four E-2T Hawkeyes were sent for upgrade in June 2010 and returned by the end of 2011. The rest two were sent in 2011. The upgrade of the four E-2T has all been completed by 2013 (Chen and Kao 2013).

As the most high-end ISR capabilities, Taiwan also launched the Formosat-5 satellite on August 24, 2017, which can provide up to two to four-meter resolution, under the US's joint funding in procurement, Table 12.

Table 12 Taiwan's Restrained but Symbolical Armaments in the BMD and ISR

Weapons	Details
BMD	**Lower-end, terminal-phase BMD System (yet, earlier than South Korea)**
	PAC-2, PAC-3, SM-2
Satellites	**Foremosat-5 Satellite (joint funding with the US)**
Recon. Aircrafts	**Low-High Mix**
	Low: Mastiff III light UAVs, RF-5E Tigereye, ASW helicopters High: E-2K (2008-2013), P-3Cs (since 2015)
Radars	**Nation-wide Scope**
	AN/FPS-115 PAVE Phased Array Warning System

Source: China's 2019 Defense White Paper; IISS, Military Balance, Annual series; Ministry of National Defense, National Defense Report, annual series.

Although Taiwan's armaments in the BMD and ISR cannot but be restrained under asymmetric alliance with the US, overwhelming China's capabilities, not to mention heavier resource constraints arising from spending about a quarter of South Korea's arms procurement, Taiwan's armaments have been relatively active than South Korea. Policy leaders' convergence on existential Chinese threats, commitment in armaments symbolical of Taiwanese commitment in defense, and efforts to anchor the US's security provisions appears to have been critical in abating the structural forces arising from the given security environment, Figure 17, Figure 18.

Figure 17 Taiwan's Armament Patterns in BMD and ISR

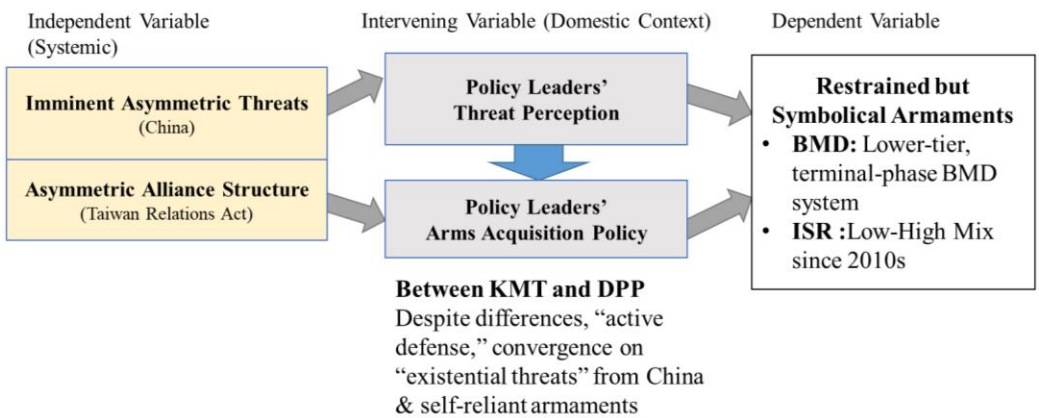
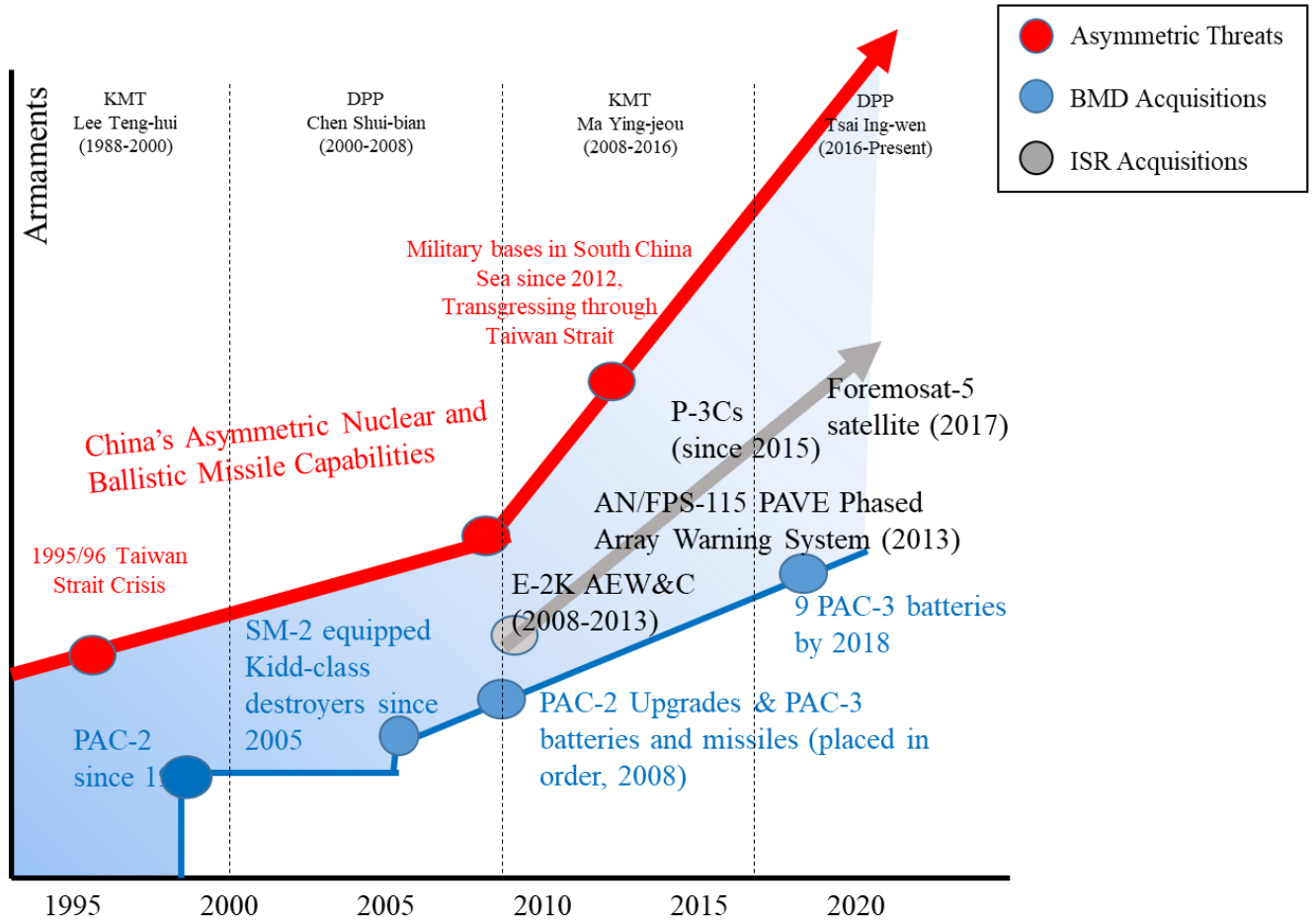


Figure 18 Summary: Taiwan's BMD & ISR Acquisitions



Source: Illustrated by author.

2) Arming under Latent Asymmetric Threats

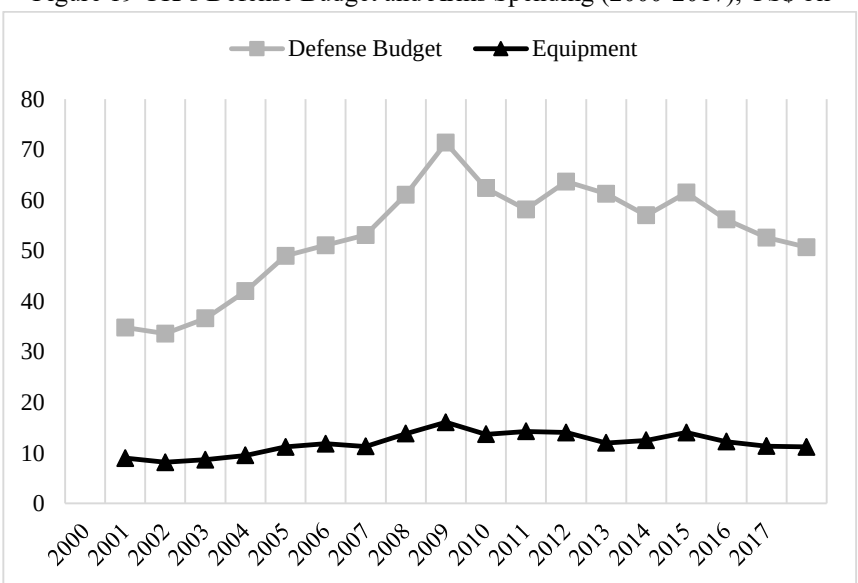
South Korea can be further contextualized in cross-national context by juxtaposing to how the US allies under latent asymmetric threats have approached armaments in the BMD and ISR capabilities. Although the more discrepant security environment of the US allies in Europe may afford little room for comparability, the two cases are selected below – the UK and Germany – which indicate how the US allies' divergent arms acquisition policy/preferences, despite latent asymmetric threat levels, can intervene differently in leading the states to seek proactive versus passive armaments in the BMD and ISR.

(1) Proactive Arms Acquisition for Alliance and Technological Edge: UK

As the National Security Strategy and Strategic Defence and Security Review 2015 stated that there is "currently no immediate direct military threat to the UK mainland" (UK Cabinet Office 2015), the post-Cold War security environment of the UK remained relatively latent in threats. As the UK's arms spending highlights, throughout 2000 to 2017, the defense budget has remained at an average of 2.3 percent of GDP. Also, the allocated budget for arms procurement has taken a fall since the outbreak of Global Financial Crisis in 2008, Figure 19. Dropping from the peak of $16.1 billion in 2008 to about fifteen percent decrease to $13.7 billion in

2009, the arms procurement budget remained at an average of $12.8 billion throughout the 2010s.[58]

Figure 19 UK's Defense Budget and Arms Spending (2000-2017), US$ bil



Source: NATO, *Financial and Economic Data Relating to NATO Defence*, annual series; IISS, *Military Balance,* Annual Series

Although the UK did begin to recognize how the UK's defense system is becoming more "tested by aircraft, including Russian aircraft, near [the UK's] airspace, and maritime activity near [the UK's] territorial waters" (UK Cabinet Office 2015), including Prime Minister Theresa May's remarks that there are "resurgence of state-based threats" in reference to Russia's military actions in Syria and Ukraine (UK Cabinet Office 2016), the UK's total military expenditure and arms

[58] NATO, *Financial and Economic Data Relating to NATO Defence*, annual series; IISS, *Military Balance,* Annual Series.

procurement budget have shown continuous fall. In 2015, the defense budget fell from $61.5 billion to $56.2 billion, and the budget solely for arms procurement also dropped thirteen percent from $14 billion to $12.2 billion, Table 13.[59]

Table 13 UK's Defense Budget (2000-2017), in US$ bil

Year	GDP	Defense Budget					FIB/DB (%)	DB Increase (%)	DB/GDP (%)
		Total	**FIB**	Personnel	Infra	Etc			
2000	1,400	34.8	**8.9**	13.3	1.5	11.0	25.7%		2.5%
2001	1,400	33.6	**8.1**	13.0	0.4	12.1	24.2%	-3.4%	2.4%
2002	1,580	36.6	**8.6**	14.6	0.3	13.0	23.6%	8.9%	2.3%
2003	1,800	42	**9.5**	16.6	0.4	15.5	22.6%	14.8%	2.3%
2004	2,150	49	**11.2**	19.5	0.9	17.4	22.8%	16.7%	2.3%
2005	2,230	51.1	**11.8**	21.3	0.2	17.8	23.1%	4.3%	2.3%
2006	2,400	53.1	**11.3**	21.5	1.3	19.0	21.2%	3.9%	2.2%
2007	2,810	61.1	**13.8**	23.7	1.4	22.2	22.6%	15.1%	2.2%
2008	2,670	71.4	**16.1**	26.1	1.5	27.8	22.5%	16.9%	2.7%
2009	2,260	62.4	**13.7**	23.4	1.4	24.0	21.9%	-12.6%	2.8%
2010	2,250	58.2	**14.3**	20.8	0.9	22.3	24.5%	-6.7%	2.6%
2011	2,470	63.7	**14.0**	23.9	1.0	24.7	22.0%	9.5%	2.6%
2012	2,440	61.3	**12.0**	23.8	1.2	24.3	19.5%	-3.8%	2.5%
2013	2,420	57	**12.5**	21.6	1.2	21.8	21.9%	-7.0%	2.4%
2014	2,950	61.5	**14.0**	22.5	1.2	23.8	22.8%	7.9%	2.1%
2015	2,860	56.2	**12.2**	20.7	0.9	22.4	21.8%	-8.6%	2.0%
2016	2,630	52.6	**11.3**	18.2	1.0	22.0	21.6%	-6.4%	2.0%
2017	2,570	50.7	**11.2**	17.3	1.0	21.3	22.0%	-3.6%	2.0%

Source: NATO, Financial and Economic Data Relating to NATO Defence, annual series; IISS, Military Balance, Annual Series.

Indeed, the bipartisan agreement on relative threat latency from asymmetric

[59] NATO, *Financial and Economic Data Relating to NATO Defence*, annual series; IISS, *Military Balance,* Annual Series.

threats has been more of a continuous phenomenon, tracing back to the early 2000s as well. Despite alternations from Labor Party (1997-2010 under Tony Blair and Gordon Brown) to Conservative Party-led (2010-2019 under David Cameron and Theresa May) governments in the post-Cold War era, [60] the UK government has maintained its earlier assessment of security environment, that the threats posed from ballistic missiles to the UK remain "many years off" (UK Cabinet Office 1998). With nuclear deterrence capability as one of the five recognized nuclear powers, Secretary of State for Defense, Geoff Hoon, in February 2001, further reiterated that "There is currently no significant ballistic missile threat, nor any other significant threat of attack."[61] In 2008 National Security Strategy, the UK government – under Prime Minister Gordon Brown of the Labor Party – also concluded that "no state currently has both the intent and the capability to pose a direct nuclear threat to the United Kingdom or its vital interests" (UK Cabinet Office 2008). When Prime Minister David Cameron restored the Conservative Party back to office since May 2010 (May 2010-July 2016), "economic security" has continued to be the primary concern of the UK government (Cameron 2015).[62] Adding to how foreign and defense policy has never been "central issue" in the UK's general elections (Harrois 2015: 1), the overall theme of Cameron's Conservative Party campaign was the UK's economic

[60] With Tony Blair assuming office as Prime Minister in May 1997 to June 2007, Blair government restored the Labor Party as the ruling party, after seventeen years of government under the Conservative Party, led by Margaret Thatcher (May 1979-November 1990) and John Major (November 1990-May 1997). Extending to another three years of government under Labor Party, with Gordon Brown as Prime Minister (June 2007-May 2010), the Conservative Party regained office under David Cameron (May 2010-July 2016) and Theresa May (July 2016-July 2019).

[61] HC Deb 12, February 2001, c49w.

[62] Prime Minister David Cameron's statement in the House of Commons on the National Security Strategy and Strategic Defence and Security Review 2015, on November 23, 2015.

situations and call for drastic cuts in defense budget. While nuclear deterrence based on the Trident SLBMs will continue to serve as the "ultimate insurance policy,"[63] Cameron proposed 'pragmatic' cuts to defense budgets to be redirected to deal with economic problems at home, as stated in the 2010 release of UK Strategic Defence and Security Review (SDSR), "Securing Britain in an Age of Uncertainty" (UK Cabinet Office 2010).

Although the opposition Labor Party has been even more reserved on the UK's armaments, raising questions whether the UK needs to maintain its nuclear deterrence, the Labor Party soon converged to consensus after the government's release of the *Trident Alternatives Review* (HM Government 2013). Departing from the position that the UK government should "look very carefully at whether renewing Trident is the necessary or the right thing to do," the Labor Party reconfirmed its position in its manifesto that the UK shall remain "committed to a minimum, credible, independent nuclear capability, delivered through a Continuous At-Sea Deterrent" (Labour Party 2015: 78).

When Prime Minister Theresa May assumed in office (July 2016-July 2019), continuing another three years of government under Conservative Party, Brexit (June 2016 referendum) and terrorist attacks, including the March 22, 2017, attack outside the House of Parliament in Westminster, London, and March 22, 2017, suicide bombing at the Manchester Arena during concert, pervaded the government's

[63] David Cameron's speech to the Conservative Party Conference on October 6, 2010.

security concerns. As the House of Commons voted and agreed under majority to renew the Trident nuclear program on July 19, 2016,[64] the May government continued the UK's reliance on its indigenous nuclear deterrence.

'Hedging' with Proactive Joint Initiatives in the BMD

Given the overall absence in imminent asymmetric threats and bipartisan consensus on maintaining nuclear deterrence as sufficient and credible means for security, the UK has indeed preferred "adherence to diplomatic means and established postures" including its own nuclear deterrence than acquiring the BMD system (Stocker 2004). Yet, with strategic priority for alliance maintenance, the UK has opted for collaborating in the policy, infrastructure, and technical realms with the US and prevent any outright disagreements that may disrupt the two countries' long-standing alliance ties. Indeed, "hedging" has been the bipartisan stance on BMD, under overall asymmetric threat latency, while seeking opportunities for self-reliant armaments and capability aggregation through joint production deals with the US and its European allies.

The UK has been no exception from other allies under the US's pressure for BMD initiatives. Tracing back to Ronald Reagan's 'Star Wars' speech in 1983, which proposed the development of interconnected system to shield against missile attacks, the US's implementation of Strategic Defense Initiative (SDI) in the 1980s called for cooperation from its closest allies including the UK for finance, research, and

[64] 472 for pro- and 117 as against, majority of 355 votes.

development of such ambitious technological system. Particularly since President George W. Bush's announcement to withdraw from Anti-Ballistic Missile (ABM) Treaty with Russia in 2001 to further enhance the BMD technology, the US began to deploy the Ground-Based Midcourse Defense (GMD) system to intercept ICBMs, requiring land-based stations across the globe including the European areas. Although President Barack Obama appeared in the beginning, since elected in 2008, to curtail the US's BMD initiatives, particularly in Europe, signing a New Strategic Arms Reduction Treaty (START) with Russia in April 2010, the Ballistic Missile Review Report released in 2010 revealed that the Obama administration indeed aimed for further modification and expansion of the land- and ship-based BMD installations in Europe, under the plans to "defend" against "regional threats" (US Office of the Secretary of Defense 2010).

While striving to maintain both its strategic alliance with the US and its nuclear-deterrence centered self-reliance in armaments, especially under the bipartisan consensus on overall threat latency from ballistic missile threats, the UK government has opted for infrastructural and technical cooperation. In a written memo on April 13, 2000, by then Secretary of State of Defense, Geoff Hoon, under Prime Minister Blair's leadership (Labor Party), expressed support for the US's position on missile defense.[65] In a statement to the House, Hoon further declared the government's position that "if there is a United States request for the use for missile defence purposes" of UK's facilities such as the Fylingdales, the UK "will consider it

[65] HC Deb 9 December 2002, c7-8.

seriously" in the ways in which the cooperation would enhance their bilateral relations. When the UK received the request from the US in December 2002 to upgrade the UK's early warning radar facilities at RAF Fylingdales for missile defense purposes, the UK government displayed support of the US, stating that proliferation of asymmetric capabilities would be also serious concerns to the UK, for which the UK's "answer to the US request must be yes, and that [UK] should agree to upgrade as proposed."[66] A MOU on the general principles of US-UK technical cooperation has been signed on June 12, 2003, between Hoon and the US Secretary of Defense, Donald Rumsfeld. The MOU stipulated in constructing the Joint Missile Defense Center, under which both sides will "manage all missile defense related efforts… including: potential UK contributions to the US BMDS Program; current and future joint work programs, including activities initiated under the SDI MOU [strategic defense initiative], research, testing and procurement; …interfaces and collaboration; personnel assignments…; and missile defense intelligence relations."[67]

Although the UK's cooperation with the US's BMD, including the modification of the Fylingdales site to missile defense purposes, have instigated speculations on the UK's possible entanglement into the wars of the US, the UK ultimately granted to upgrade the radar systems at the site as requested. Since 2007, under Prime Minister Brown (Labor Party), the UK further granted the US's use of

[66] HC Deb 15 January 2003, c696-699.

[67] Memorandum of Understanding between Secretary of Defense on behalf of the Department of Defense of the United States of America and the Secretary of State for Defence of the UK and Northern Ireland concerning Ballistic Missile Defence, June 2003.

the satellite communication facilities at RAF Menwith Hill station to complement the US's missile defense system. The Menwith Hill is run by the US National Security Agency (NSA), working as critical component of the US's intelligence-gathering. These two joint use of Fylingdales and RAF Menwith Hill bases in Yorkshire now serves as the joint means to detect, track, and, allow interception of incoming missiles. By 2007, the Menwith Hill also became the European Ground Based Relay Station for the US Space-Based Infrared System (SBIRS), which is critical component of the US's early warning and tracking system for missiles, developed to upgrade the US Defense Support Program (DSP) satellite systems. As elaborated earlier, the SBIRS and DSP satellites are important source of information shared to the US allies including South Korea and Japan in case of North Korea's nuclear and ballistic missile tests.

While Prime Minister David Cameron, coming into office since May 2010, restored the Conservative Party-led administration in the UK, the 2015 UK SDSR appears to reflect overall continuity in "hedging" for autonomous BMD armaments while seeking proactive joint production programs in technical realms. The 2015 SDSR announced the UK's commitment in building ground-based radar system to enhance NATO's missile defense system. The UK's hedging through the NATO umbrella has been indeed another continuity within the UK government, dating back to Margaret Thatcher in the 1980s. Shortly put, the UK's three-pronged strategy included "lukewarm" support for direct incorporation into the US's BMD system, while "committing" in cooperation with the US for research, and seeking

simultaneous cooperation with the European partners (Kaushal 2019).

While overall nuclear and ballistic missile threat latency lied at the foundation of the UK policy leaders' lukewarm interest in the autonomous BMD acquisitions, the strategic interests in maintaining the US-UK alliance and close partnership with the Europe, as well as opportunities for technological and capability aggregation in the state-of-the-art technologies, impelled the UK to be keen on acquiring BMD related technologies and infrastructures. The UK is in this regard can be surmised as 'proactive' in BMD, particularly in the cross-national context, as the BMD-related cooperation incurred despite concrete, identifiable, and/or immediate asymmetric threats.

Furthermore, the rationale for such proactive approach to the BMD appears to have situated upon the specific alliance structure between the US and UK. The UK's maintenance of its own nuclear deterrence – the Trident D5 missiles equipped on their four vanguard ballistic nuclear submarines, as of 2018 (IISS 2018) – has been indeed critical for the symmetricity in the force structure between the US and UK. Given the overall threat latency from asymmetric threats, the UK's nuclear deterrence has been critical in allowing its successful hedging against a kind of BMD spree. Opting for nuclear deterrence, the UK remained without any land-based BMD systems. Also, at sea, the UK limited its armaments to anti-ship missile defense systems, including the Sea Viper deployed on the Type-45 class destroyers and Rapier air defense systems that can engage little more than about five miles away in range. Nonetheless, to fill possible power vacuum in the BMD capabilities, the UK

has proactively extended its symmetric alliance ties with the US to the realms of technological and infrastructural cooperation in the BMD. The MOU with the US in the establishment of the Missile Defense Center, for instance, made strategic sense to work together with the US on expensive software and radar enhancements of its own armaments. Particularly in the context of plans to decommission old weapons system and reduce military personnel in the 2010s, Table 14, symmetric cooperation with the US afforded the UK's proactive acquisition of technologies to reinforce its technological edge and alliance with the US, despite relative threat latency in asymmetric capabilities.

Table 14 UK's Plan for Equipment Decommissioning in the 2010s

Equipment	Schedule
Army	
Challenger 2 Tank – 40% reduction	TBD
AS90 Heavy Artillery – 35% reduction	TBD
Royal Navy	
Carrier HMS Arik Royal - Decommission	2010
Remaining 4 Type-22 Frigates - Decommission	April 2011
RFA Largs Bay - Decommission	April 2011
RFA Bayleaf & RFA Fort George - Withdrawal	April 2011
Carrier HMS Illustrious - Withdrawal	2014
Sea King Mk7 - Withdrawal	2016
Royal Air Force	
Harrier Fleet – Retire	2011
VC-10 and Tristar - Withdrawal	2013
Tornado Fleet (40->18)	2015
Sentinel Surveillance Aircraft (Withdrawal)	2015

Source: House of Commons Research Paper (2011).

In the high-end satellite and advanced ISR capabilities, despite falling defense budget and latent asymmetric threats, the UK maintained its overall symmetricity in alliance structure, by seeking self-reliant armaments to maintain its strategic edge in the region. The fixed-wings include multiple range of UAVs, such as the medium Watchkeeper to heavy MA-9A Reaper UAVs, and diverse AEW Sea King aircrafts Sentinel and Shadow ISR aircrafts, RC-135W Rivet Joint electronic intelligence aircrafts, and advanced airborne early-warning and control E-3D Sentry (IISS 2018). The latter RC-135 variant is one of the ISR assets stationed by USFJ, critical to South Korea's detection and tracing of North Korea's ballistic missile tests.

Aside from autonomous fleets, the symmetricity in alliance structure shaped the UK's proactive cooperation with the US in advanced satellite, space-related programs with the US. Building upon the Five Eyes signals intelligence alliance forged during World War II among the US, UK, Australia, Canada, and New Zealand, the UK has long institutionalized joint operation of surveillance programs with the US. The Joint Forces Command within the UK's Ministry of Defense, has cooperated with the US in overseeing the space, intelligence, information system, and cyberspace with access to the Pentagon's space war games and technologies (e.g. US's Schriever space wargames). In addition to the UK's autonomous Skynet satellites in operation (-4, -5), the UK also closely cooperates with the US's satellite system for military purposes (Norris 2011: 45). The symmetric nature of cooperation embedded in the alliance has been critical in the development of the UK's gradual

self-reliant arms acquisition policy in space, particularly after the UK's Brexit, which in essence terminated the UK's previous space relative activities under the European Space Agency (e.g. Galileo satellites). Dating back to the founding of the UK Space Agency (UKSA) in 2010, the UK in 2014 and 2015 showcased its first UK National Space Policy and National Space Security Policy, respectively. By 2018, the UK enacted the UK Space Industry Bill into law, creating a framework for further commercial space legislation (Bowen 2017).

When asymmetric threats from adversaries remained latent, the UK's rationality in seeking proactive armaments in the BMD and ISR sectors has been largely driven by their pursuit for regional/global military edge and securing their existing bilateral and multilateral security frameworks as source of "additional security," Table 15. Such trend is likely to be aggrandized as the UK, especially in the prospective post-Brexit era, will be approaching a new "inflection point" for UK to consider serious funding for BMD and ISR armaments. Not only due to Russia and North Korea's accelerated threat of missile capabilities since mid-2010s, which are becoming "far beyond previous official expectations," as Peter Roberts (2018) put, but also because the UK's withdrawal from the European Union would terminate previous joint development programs and networks in space and BMD that the UK has previously engaged. Going out of the EU would mean the UK's need for more armaments to fill the possible vacuum in their capabilities.

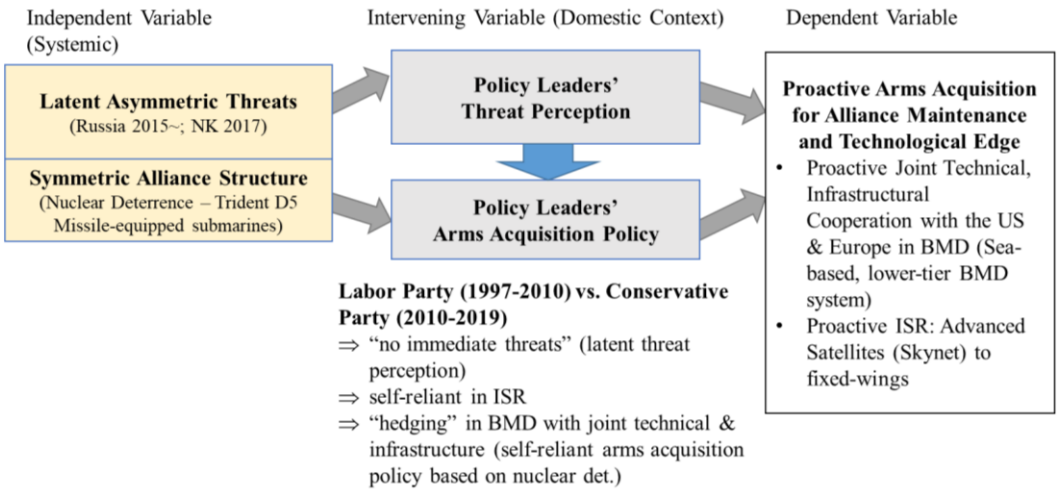
Table 15 UK's Proactive Armaments in the BMD and ISR

Weapons	Details
BMD	**Lower-end: Ship-based Sea Viper**
	Proactive Joint Initiatives in Technical Research & Infrastructure • Technical Research with NATO & US • Infrastructural Cooperation: Upgraded Early Warning Radar (UEWR) in Fylingdales; Granting use of satellite communication facilities at RAF Menwith Hill
Satellites	**Skynet Satellites**
	Proactive Joint Initiatives • Five Eyes signals intelligence alliance • Joint Forces Command within the UK's Ministry of Defense
Recon. Aircrafts	**Advanced**
	• UAVs: medium UAV Watchkeeper; heavy MA-9A Reaper UAVs • ACs: Sea King aircrafts; Sentinel; RC-135W Rivet Joint (ELINT), AWACS E-3D Sentry

Source: Listed by author in reference to official reports, IISS Military Database, and SIPRI Database.

Despite threat latency in asymmetric nuclear and ballistic missile threats, the symmetry in alliance structure, reinforced by overall consensus on armaments among the policy leaders, appear to be central in enabling the continuity in the UK's reliance on its autonomous nuclear deterrence, while seeking proactive means for BMD cooperation with the US and armaments in the ISR, Figure 20. The UK's interests in alliance management and search for joint production deals have intervened towards proactive armaments in the state-of-the-art BMD and ISR, regardless of overall threat latency from asymmetric nuclear and ballistic missile threats.

Figure 20 UK's Proactive Armaments in the BMD & ISR



(2) Passive Arms Acquisition: Germany

Under overall threat latency from asymmetric threats and increasing asymmetric division of labor in force structure, Germany has shown passive arms build-up in both BMD and ISR capabilities. Unlike the UK's pursuit for proactive armaments to maintain its technological edge and global and regional presence within the parameters of the alliance with the US, Germany appears to have grown most lukewarm in autonomous armaments in the state-of-the-art weapons system.

While the comparison may be less suited as Germany's reliance on the US's security commitment charters on a multilateral framework under the North Atlantic Treaty Organization (NATO) than the bilateral military alliances of the above cases, Germany is in many occasions conversed in tandem with South Korea and Japan as

the major 'continental allies' of the US that house the largest number of US's military personnel and bases on their soil. According to 2015 data on the US's overseas deployment, Germany ranks second with 34,805 military personnel, between Japan (39,345) and South Korea (23,468).[68] More critically, Germany's limitations in arms acquisitions have drawn significant criticisms from both at home and abroad that shed some important implications on South Korea.

To elaborate, all political stripes of Germany since the fall of the Berlin Wall and reunification have pursued drastic cuts in defense spending. Aside from the political, economic, and social policy schisms between the Social Democratic Party (SDP) and Christian Democratic Union (CDU), which ran the country from 1998-2005 and 2005-present, respectively, post-militarism has indeed pervaded across the political parties. With the reform of the Bundeswehr in 2011, in particular, Germany further proceeded to suspend compulsory military service, reduced the total number of personnel, and made their military focused on crisis management operations (Kunz 2018). Indeed, Germany's defense in essence came to increasingly reliant on the multilateral NATO security framework, including the US and its binational security cooperation in Europe, rejecting unilateral operations in principle. Such post-military trajectory is generally perceived to be making Germany's autonomous military readiness hollow and "short of almost everything" (Deutsche Welle 2016), wherein only a fraction of existing stockpiles of weapons remains fully operational.

[68] Countries with highest number of US's overseas deployment (over 10,000 personnel) include, as in the order of Japan (39,345), Germany (34,805), South Korea (23,468), and Italy (12,102). US Department of Defense (2015).

As further criticism goes, the gap between Germany's own military capabilities and that of neighboring partners is making Germany inevitably a country "defended by others,"[69] the "quintessential European free-rider" (Rough 2018), that is drawing the ire from its NATO partner countries, including the US.

Germany's overall passivism for armaments under latent security threats can be seen explicitly in the sheer bulk of military expenditures and arms procurement. As observable from Table 16, Germany's total defense budget dwindled to an average of spending 1.2% of GDP from 2000-2017.

Table 16 Germany's Defense Budget (2000-2017), in US$ bil

Year	GDP	Defense Budget					FIB/DB (%)	DB Increase (%)	DB/GDP (%)
		Total	FIB	Personnel	Infra	Etc			
2000	1,800	23.6	**3.2**	14.3	1.2	4.9	13.5%		1.3%
2001	1,800	21.5	**3.0**	13.0	0.9	4.6	14.0%	-8.9%	1.2%
2002	2,240	25.1	**3.5**	14.9	1.1	5.5	14.1%	16.7%	1.1%
2003	2,410	27.7	**3.8**	16.6	1.1	6.1	13.8%	10.4%	1.1%
2004	2,670	29.7	**4.4**	17.6	1.1	6.6	14.8%	7.2%	1.1%
2005	2,850	30.2	**4.3**	17.6	1.1	7.2	14.2%	1.7%	1.1%
2006	2,880	34.8	**5.2**	19.9	1.3	8.5	15.0%	15.3%	1.2%
2007	3,440	38.9	**5.7**	21.3	1.6	10.3	14.6%	11.6%	1.1%
2008	3,650	43.3	**7.4**	23.3	1.8	10.8	17.1%	11.4%	1.2%
2009	3,400	46.5	**8.2**	24.7	2.2	11.4	17.6%	7.4%	1.4%
2010	3,280	42.3	**7.4**	22.3	2.2	10.4	17.6%	-9.0%	1.3%
2011	3,600	44.2	**7.3**	23.1	1.8	12.0	16.4%	4.5%	1.2%
2012	3,400	41.0	**6.7**	20.7	1.4	12.1	16.5%	-7.2%	1.2%
2013	3,600	44.2	**5.6**	22.0	1.6	15.0	12.7%	7.8%	1.2%
2014	3,870	43.1	**5.6**	21.8	1.6	14.1	12.9%	-2.5%	1.1%

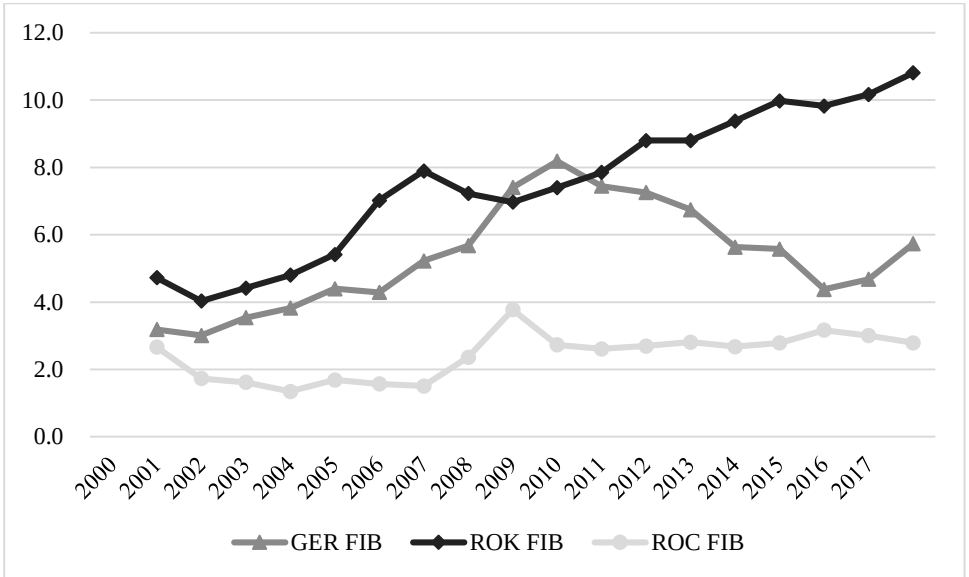
[69] According to journalist Paul Taylor

2015	3,370	36.7	**4.4**	18.3	1.3	12.7	11.9%	-14.8%	1.1%
2016	3,490	38.3	**4.7**	18.5	1.3	13.8	12.2%	4.4%	1.1%
2017	3,650	41.7	**5.7**	20.3	1.6	14.0	13.8%	8.9%	1.1%

Source: NATO, Financial and Economic Data Relating to NATO Defence, annual series; IISS, Military Balance, Annual Series.

As Figure 21 further juxtaposes Germany's spending on weapons system (only force improvement budget, excluding personnel and other military operating costs) to South Korea and Taiwan, Germany's spending on defense articles have fallen below the amount spent by South Korea, except for the years in 2009 and 2010. Although total defense budget of Germany continued to exceed that of South Korea from 2000 to 2017, when it comes to spending on weapons only, excluding the personnel, maintenance, and other operating costs, South Korea in fact spent about an average of 1.5 times more in armaments than Germany. In 2015 and 2016, South Korea spent 2.2 times more. Germany spent only an average of twofold than Taiwan, the disparity becoming even more vague in years like 2001 and 2015, as Germany spent about 1.2 and 1.4 times more than Taiwan, respectively. Germany appears to be the typical model of capability restraint under limited systemic imperatives for armaments in the post-Cold War Europe. Interrelated, Germany launched significant cuts in military throughout the 2000s, setting out plan to close about 200 military bases, decommissioning of armored vehicles and other conventional weapons system. The air defense system ModFlaSys has been abandoned and further curtailment occurred with Tiger helicopters, TRIGATs, and NH90s.

Figure 21 Force Improvement Budget (FIB) by Germany, South Korea, and Taiwan (2000-2017), US$ bil



Source: NATO, Financial and Economic Data Relating to NATO Defence, annual series; IISS, Military Balance, Annual Series; ROK. Defense White Paper, annual series; Ministry of National Defense, ROC. National Defense Report, annual series

Despite Germany's outright minimalist take on autonomous defense capabilities in both BMD and ISR, Table 17, the most intriguing implications from the German case arise from the similarities and differences from the UK's proactive interests in cooperation with the US. As the German defense white paper published in October 2006 called for the need to enhance reconnaissance, command and control, missile defense, and precision strike capabilities to contribute in times of international crisis, Germany has shown resilient, although limited, interests in joining multilateral efforts in the BMD system as well as acquisitions of European-made Typhoon aircrafts. To fill any possible force vacuum while Germany restructures its defense system, Germany has upgraded their existing stockpiles of

patriot batteries to PAC-3s and PAC-3 CRI missiles. Germany has also continued investments in multilateral missile defense programs such as the Medium Extended Air Defense System (MEADS) with the US and Italy,[70] and the European Phased Adaptive Approach (EPAA) missile defense system (Kaya 2013). Despite threat latency, Germany maintained, although limited, multilateral efforts in the state-of-the-art military ventures.

Table 17 Germany's Passive Arms Acquisitions in BMD and ISR

Weapons	Details
BMD	**Lower-end:** PAC-2/PAC-3, upgraded from the 1980s
	Some Multilateral Efforts - Joint development with US & Italy: Medium Extended Air Defense System (MEADS), decision in 2015 to acquire them with continued delays (Taktisches Luftverteidigungssystem) - the European Phased Adaptive Approach (EPAA) missile defense system
Satellites	**Dependent on NATO** (France-Germany mil satellite discussions since 2017)
Recon. Aircrafts & Radars	**Lower-end**
	- UAVs: Heavy-Medium-light UAVs (Heron, KZO, Luna) - Ground-based radars: Cobra, RASIT, RATAC

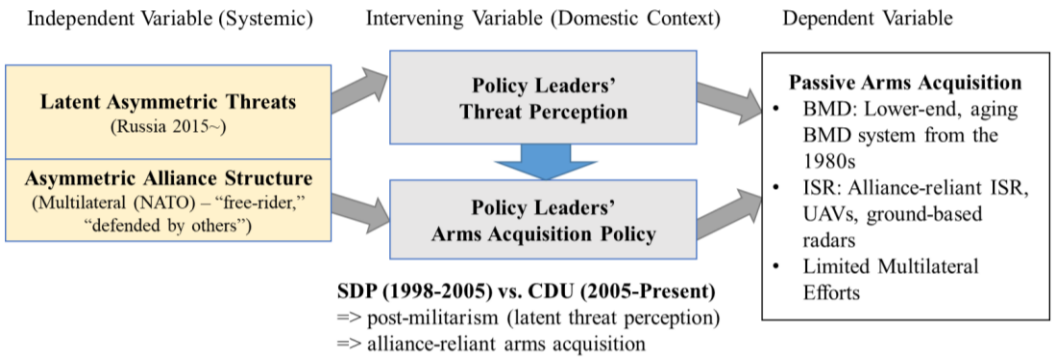
Source: Listed by author in reference to official reports, IISS Military Database, and SIPRI Database.

In cross-national context, Germany's passive armaments in the BMD and

[70] When the US's withdrew from MEADS in 2011, however, Germany also decided to not buy the MEADS and instead opted to seek its own *Taktisches Luftverteidigungssystem* (TLVS) using the technologies and know-hows acquired from the MEADS program. See, Gotkowska (2018).

ISR have accumulated upon limited systemic imperatives (asymmetric threats), asymmetric alliance force structure with the US, reinforced by internal drive for post-militarism – a typical model of restrained capability aggregation under low threat environment in the post-Cold War Europe, Figure 22.

Figure 22 Germany's Passive Armaments in the BMD and ISR

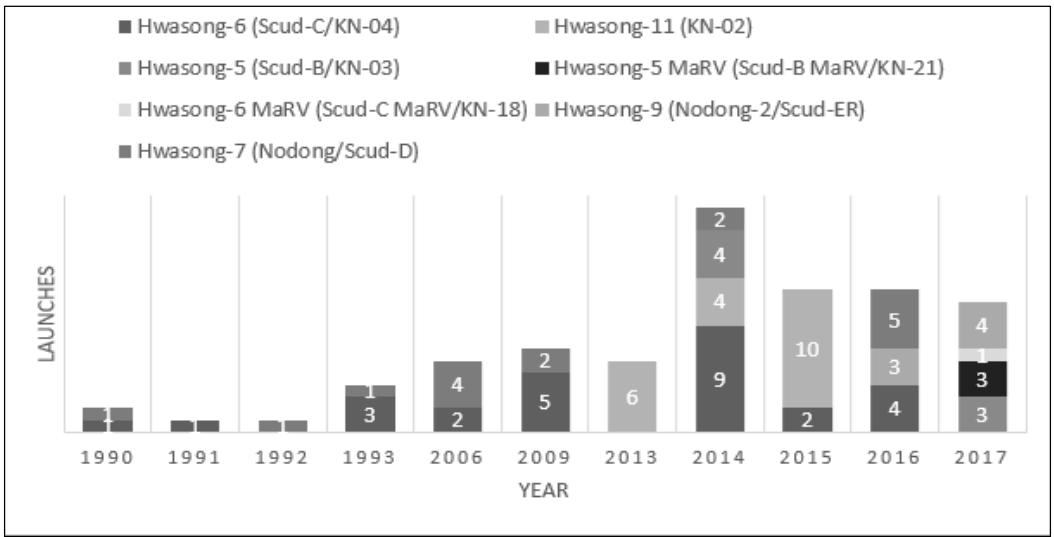


2. South Korea's Restrained Arms Acquisition in the BMD and ISR

1) North Korea's Asymmetric Threats & Alliance-reliant Armaments

Asymmetric nuclear and ballistic missile threats to South Korea have centered on North Korea's emergence as de facto nuclear power by the late 2010s. From the 1990s to 2017, North Korea went through a total of seventy-five successful test-launches of their Scud-variant short- (SRBMs) to medium-range ballistic missiles (MRBMs), ranging from Hwasong-6 (Scud-C), Hwasong-5 (Scud-B), Hwasong-9 (Scud-ER, Extended Range), Hwasong-7 (*Nodong,* Scud-D), recent Scud-C (KN-18) and Scud-B (KN-21) variants with maneuvering reentry vehicle (MaRV), as well as Soviet's Tochka-derived Hwasong-11 (KN-02 or Toksa), placing the region under direct range of North Korea's ballistic missile capabilities, Figure 23.

Figure 23 North Korea's SRBM-MRBM Tests (1990-2017)



Type	Weapons Designation		Range	Target Range	Total Tests (1990-2017)
	NK	Other			
Short-range Ballistic Missiles (SRBMs)	Hwasong-11	Toksa/KN-02	130-160km	Part of Korea	20
	Hwasong-5	Scud-B/KN-03	300km	Korean Peninsula	7
	Hwasong-6	Scud-C/KN-04	500km		27
	Hwasong-5 MaRV	Scud-B/KN-21	250km	Korean Peninsula	3
	Hwasong-6 MaRV	Scud-C/KN-18	450km		1
Medium-range Ballistic Missiles (MRBMs)	Hwasong-7	Nodong/Scud-D	800km	Korean Peninsula, Japan	16
	Hwasong-9	Nodong-2/Scud-ER	1,000-1,500km	Korean Peninsula, Japan (Okinawa)	7

Source: Drafted by author, in reference to, the CNS North Korea Missile Test Database, funded by NTI.
Note: 1990, 1991, 2/5 2016 Nodong, and 2017 Hwasong-5 MaRV tests failed

Beginning with the first underground nuclear test of magnitude of one to two kilotons in October 2006, second nuclear test in May 2009, North Korea in the 2010s under the latest Kim Jong-un regime (2011-present) embarked upon successive nuclear tests and test-firings of longer-range ICBMs and SLBMs,[71] including the

[71] The two main pillars of the so-called "nuclear triad [(ICBM, SLBM, and bombers)]" advanced delivery systems for nuclear warheads, See US Office of the Deputy Assistant to the Secretary of Defense for Nuclear Matters (2010).

ICBM-type Hwasong-12 (KN-17), Hwasong-14 (KN-20), and SLBM-type Pukkuksong-1 (KN-11), as well as the sixth nuclear test (supposedly hydrogen bomb) of the largest magnitude to this date on September 3, 2017 (100-120kt). As North Korea for the first time officially alleged to have finally succeeded in test-launching of the ICBM-type Hwasong-15 (KN-22) on November 29, 2017, becoming capable of targeting distances of up to approximately 13,000km – placing all of the US mainland for the first time within North Korea's target ranges, Table 18 (Klingner 2017; Lee Geun 2017).

Table 18 North Korea's Nuclear and ICBM/SLBM Tests (2000-2017)

Date	**Nuclear Test (Yield)/Missile (Range)**	**Regime**
Nov-29-2017	ICBM Hwasong-15 (8,500-13,000km: KN-22)	Kim Jong-Un (4 Nuclear Tests; 6 ICBM-type Tests; 6 SLBM-type Tests)
Sep-3-2017	*6th Nuclear Test (100-140 kt)*	
Jul-28-2017	ICBM Hwasong-14 (8,000-10,000km: KN-20)	
Jul-4-2017	ICBM Hwasong-14 (8,000-10,000km: KN-20)	
Sep-9-2016	*5th Nuclear Test (10 kt)*	
Aug-24-2016	SLBM Pukkuksong-1 (1,200km: KN-11)	
Jul-9-2016	SLBM Pukkuksong-1 (1,200km: KN-11)	
Apr-23-2016	SLBM Pukkuksong-1 (1,200km: KN-11)	
Feb-7-2016	ICBM/SLV Taepodong-2/Unha-3 (4,000-10,000km/+)	
Jan-6-2016	*4th Nuclear Test (7-10 kt)*	
Dec-21-2015	SLBM Pukkuksong-1 (1,200km: KN-11)	
Nov-28-2015	SLBM Pukkuksong-1 (1,200km: KN-11)	
May-9-2015	SLBM Pukkuksong-1 (1,200km: KN-11)	

Feb-12-2013	*3rd Nuclear Test (6-9 kt)*	
Dec-12-2012	ICBM/SLV Taepodong-2/Unha-3 (4,000-10,000km/+)	
Apr-13-2012	ICBM/SLV Taepodong-2/Unha-3 (4,000-10,000km/+)	
May-25-2009	*2nd Nuclear Test (2.4 kt)*	Kim Jong-Il (2 Nuclear Tests; 2 ICBM-type Tests)
Apr-5-2009	ICBM/SLV Taepodong-2/Unha-3 (4,000-10,000km/+)	
Oct-09-2006	*1st Nuclear Test (1-2 kt)*	
Jul-5-2006	ICBM/SLV Taepodong-2/Unha-3 (4,000-10,000km/+)	

Source: Compiled by author in reference to, Comprehensive Test Ban Treaty Organization (CTBTOL), ROK Ministry of National Defense; CSIS Missile & Defense Project.
Note: The 2000s also include North Korea's test-firing of its cruise missiles in 2003 (three times), 2007 (four times), 2008 (six times), 2012 (twice), 2015 (four times), and 2017 (four times) – KH-35 and KN-01, 150-260km).

While North Korea's emergence as de facto nuclear power stimulated arms build-up by neighboring states in the region, the incremental growth in asymmetric nuclear and ballistic missile capabilities appears to have had less immediate effect on South Korea's drive for BMD and ISR capabilities.

2) Case of Missile Defense: Between the US's BMD and KAMD

To elaborate, South Korea's strategic considerations on the BMD capabilities began upon its dire economic conditions that beset the country since the 1997 Asian Financial Crisis. Outlining 3.1 percent of GDP as the defense budget plan for FY1999 in 1998, which reflected a drop of 0.4 percent for the first time in the fifty years of South Korean history, the IMF constraints indeed drove South Korean policy

leaders to focus on building and maintaining “current” and affordable capabilities in the late 1990s (ROK National Assembly Secretariat 1998: 2-3). Although the 1998 Taepodong-launch accelerated Japan’s BMD armaments within the US-led BMD architecture, the 1998 and 1999 fiscal conditions of South Korea afforded little room. As exemplary, South Korea postponed the payment of 750.1 billion won for Foreign Military Sales (FMS) from the US to be paid in years after 2000 in order to reduce loss from drastic fall in South Korea’s foreign exchange rates (ROK National Assembly Secretariat 1999c: 10-11). 96.2 billion won from 3.8 trillion won from force improvement expenditure was redirected to meet the government spending on military personnel and force operation in 1998 (ROK National Assembly Secretariat 1999c: 16). In this backdrop, South Korea announced its first formal refusal in 1999 that South Korea will not acquire nor joint the US-led BMD systems (then, TMD).

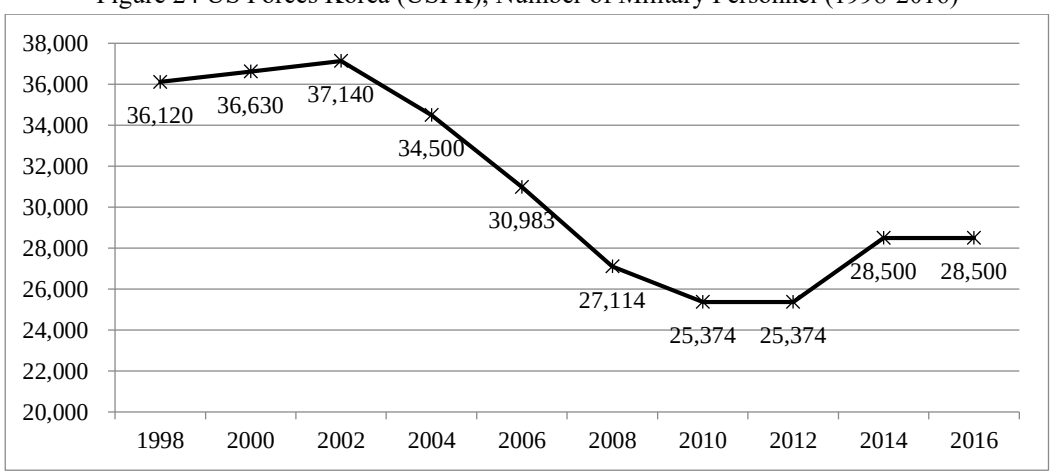
As Defense Minister Chun Yong-taek’s further remarks at the National Assembly reveals, South Korea put forth “economic development and social development,” “Economic revival” “prioritized over any other national agendas in 1999,” as the country strived to restore from the 1997 Asian Financial Crisis (ROK National Assembly Secretariat 1998: 70). The incipient phase of South Korea’s deliberation on the BMD placed the South Korean government to maintain alliance-dependent defense posture. As Defense Minister Chun Yong-taek further stated, in case of North Korea’s missile contingencies, “The USFK’s Patriot missiles can be used, when necessary, not only to protect the USFK but also entire Korean Peninsula including the metropolitan areas” (ROK National Assembly Secretariat 1998: 70).

If the incipient phase of South Korea's ambivalence to BMD acquisitions emerged from its economic distress, South Korea's restraint soon gained more political weight since the early 2000s as South Korean government embarked on major inter-Korean reconciliatory agenda, dubbed as the Sunshine Policy, under which cooperation with rising China became politically and economically significant. As the first progressive government under President Kim Dae-jung came into power since 1998 (1998-2003), the threat recognition on North Korea's asymmetric threats has indeed become more contested. Although North Korea announced its withdrawal from the NPT in January 2003, the consecutive progressive regime under President Roh Moo-hyun (2003-2008) appeared to further consolidate such "progressive-conservative" split on threat recognition. While President Lee Myung-bak (2008-2013) restored conservative-rule since 2008, followed by President Park Geun-hye (2013-2017), North Korea's asymmetric capabilities have continued to be bound to dichotomous debate, under which both progressive and conservative regimes became bounded to domestic backlash. The attempts for autonomous armaments have ensued with criticisms for being 'revisionist' to the ROK-US alliance, while limited armaments have been criticized for being 'reconciliatory' to South Korea's main adversary, North Korea. While such constraints have not been always so static nor deterministic, the policy leaders' contested threat perception and preference for regime stability repeatedly found prolonging the status-quo, division of labor, and/or alliance-reliant armaments in the BMD and ISR than change.

The geopolitical context also transformed with the US's relocation to fight

their war on terrorism in the Middle East since 9/11. Unlike how the US's GPR had significant repercussions in accelerating Japan's active armaments in the BMD, South Korea's armament priorities became further complex as the GPR accompanied with the ROK-US agreement in 2006 to transfer the wartime OPCON back to the South Korean military (ROK National Assembly Secretariat 1998: 2-3).[72] While the US's repositioning involved force reduction from the USFK to dispatch additional forces to the Middle East,[73] Figure 24, South Korean government's armament priorities went to other conventional realms including armored vehicles, fighter-jets, and patrol ships.

Figure 24 US Forces Korea (USFK), Number of Military Personnel (1998-2016)



Source: IISS, *The Military Balance,* annual series.

[72] The OPCON was first transferred in July 1950 when North Korea invaded across the 38th parallel, triggering the US's involvement in the Korean War to repel communist expansion on the Korean War. The OPCON of ROK forces remained so (UNC), with only a ten-day break in May 1961 during General Park Chung-hee's military coupd' état. In years 1978-1994, the US retained both wartime and peacetime OPCON through its leadership of the US-ROK Combined Forces Command (CFC). While the peacetime OPCON transferred back to South Korean military in 1994, the wartime OPCON remains under CFC until today.

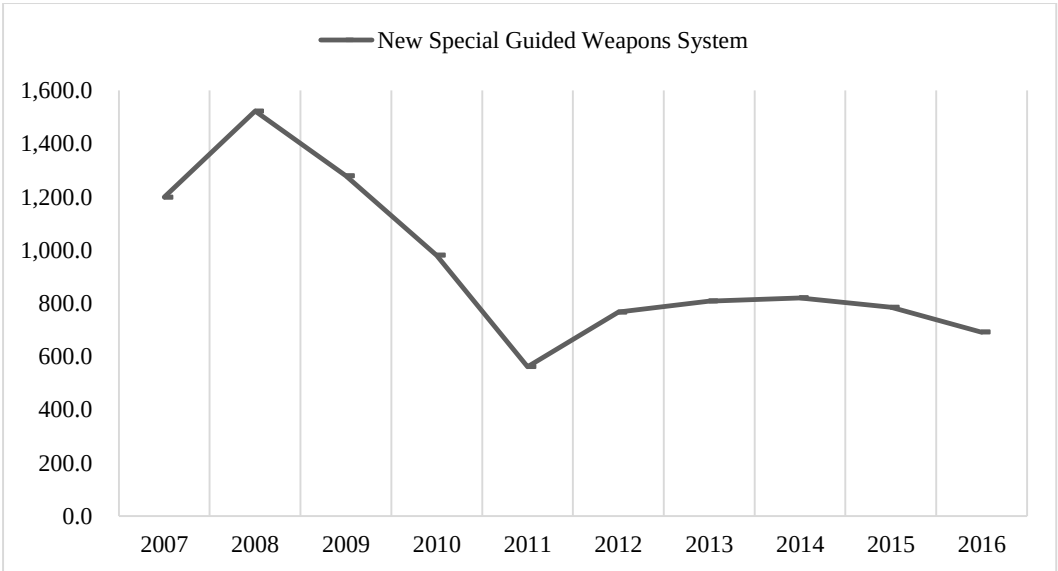
[73] The US declared force reduction from South Korea in June 2003 in implementation of the GPR.

When North Korea resumed to consecutive ballistic missiles tests and launched the first nuclear test in October 2006, South Korean government continued to restrain its acquisitions to low-end missile defense capabilities such as the second-hand ground-based PAC-2 from Germany and ship-based SM-2. Under the geopolitical context of increasing economic interdependency and strategic value of reconciling North Korea, South Korean government rested ambivalent to BMD acquisitions, capping the armaments to low-end and lower-tier assets as interim choices, and insisted on building independent Korea Air Missile Defense (KAMD) system. As President Roh Moo-hyun's later remark in his speech on October 1, 2008, at the first anniversary of October 4 declaration illustrates, South Korean government in the 2000s insisted on refusing the US's proposals including the regional BMD system and new preemptive-oriented "operational plan 5029" that may "provoke North Korea and China.[74]

As Figure 25 highlights, South Korea's defense budget categories have never treated the BMD in separate bracket. Under a comprehensive classification, named as 'new special guided weapons system,' the BMD budgets have been treated as part of armaments for offensive missile capabilities including the cruise missiles. Except for a peak in 2008, the arms procurement budget encompassing the BMD has shown continuous fall – a clear divergence between increasing asymmetric threat levels and BMD acquisitions.

[74] President Roh Moo-hyun, October 1, 2008, the first anniversary of October 4 declaration.

Figure 25 South Korea's Expenditures in Special Guided Weapons System (2007-2017), in billion won

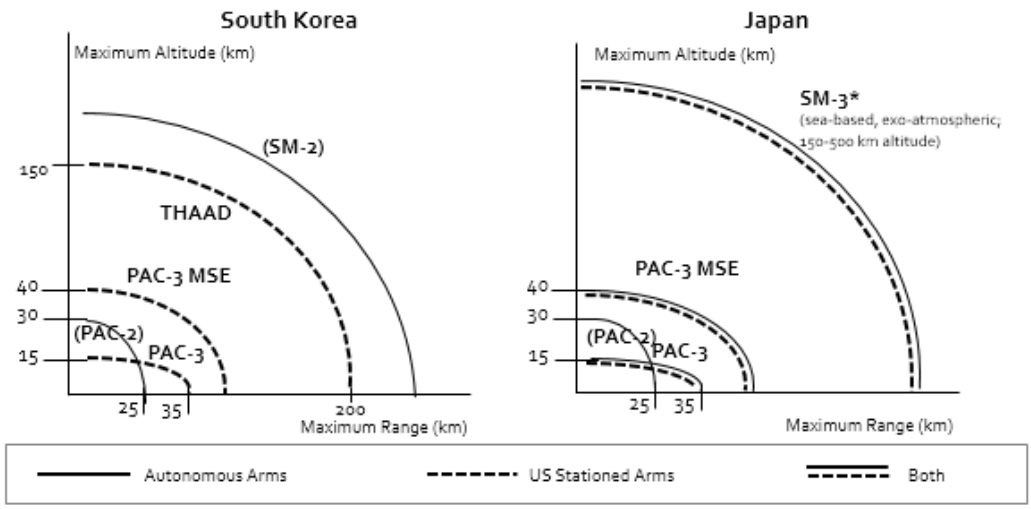


Source: DAPA. *Defense Acquisition Program Statistical Yearbook*, annual series; DAPA. *Fiscal Year Balance*, annual series.

While North Korea under Kim Jong-un regime has shown unprecedented level of asymmetric nuclear and ballistic missile tests, the early 2010s continued to be further stricken by the government's reservations on arms spending after the 2008 Global Financial Crisis. The deepening of economic interdependence and assertiveness of China in the region, also constrained South Korea's BMD acquisitions, as explicit in the case of THAAD. South Korea's "tilting" towards China or "swinging" between the US and China (Park Cheol Hee 2015; Kang Tae-jun 2015; Han Suk-hee 2012; Power 2015) have bereft of neither strategic strengthening of the bilateral alliance with the US nor active armaments of its own in autonomous BMD capabilities. As Japan and Taiwan's approach to BMD illustrates,

South Korea has remained relatively belated and restrained in autonomous BMD capabilities despite increasing imminence of asymmetric threats, Figure 26.

Figure 26 South Korea's BMD Capabilities in Comparative Context



Source: Illustrated by author with data from IISS, Military Balance; Defense White Papers and Government reports; in inspiration from BMD weapons diagram by Heritage Foundation, see, Klingner (2015).

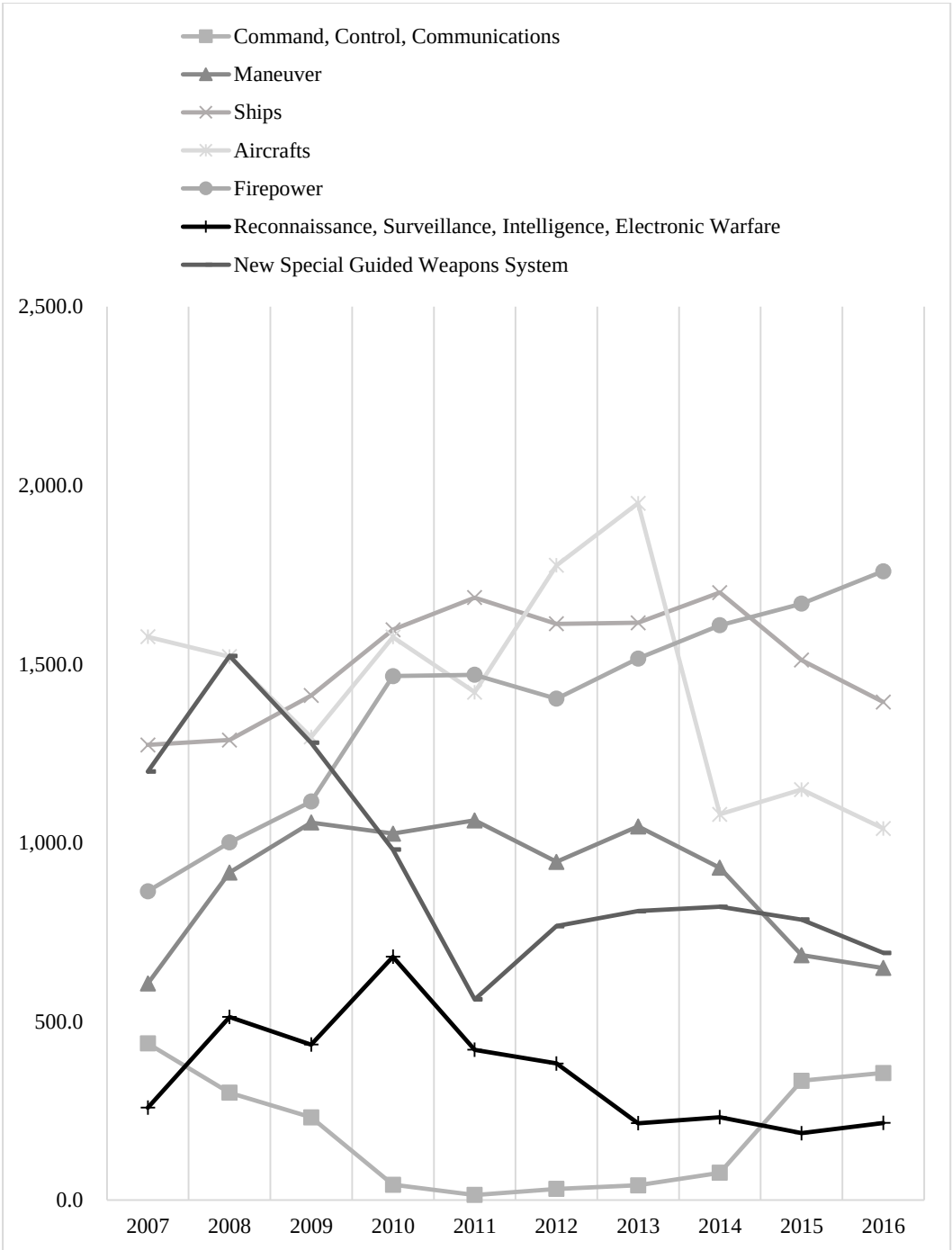
3) Case of ISR: OPCON Transfer & Armament Priorities

While South Korea's increasing strategic focus on inter-Korean and ROK-PRC relations reinforced its asymmetric reliance on the US under the confines of the ROK-US combined defense system, this study also finds that the repeated interactions in the ROK-US relations and ambivalence to the US-led security initiative in the region have transcended to other realms of military cooperation, including South Korea's armaments in the ISR capabilities.

The US's strategic emphasis on the Middle East after the 9/11 became intertwined with the US's relocation of the bases in South Korea and the ROK-US agreement in 2006 to transfer the wartime OPCON to South Korean military by 2012. Although South Korea strived for active armaments in autonomous ISR capabilities to meet the timeline for OPCON transfer, South Korea's ambivalence to the US-led BMD architecture reinforced the asymmetric force structure between South Korea and the US. Also, North Korea's nuclear tests and military provocations since October 2006 have ensued with reinforcement of the existing ROK-US combined defense system, punctuating the plans for OPCON transfer.

Following the repeated postponement of OPCON transfer, the budget for the state-of-the-art ISR capabilities has continuously dwindled as armament priorities of the government went to acquiring other conventional platforms than the costly BMD and ISR capabilities, Figure 27. In sheer number, the accumulated sum of arms spending from 2007-2017 (availability of data) has been the highest in the category of 'ships/vessels' with a total of 16.1 trillion won, followed by aircrafts with sixteen trillion won, and firepower with 14.6 trillion won. In terms of average from 2007-2017, budget allocations for ISR and command, control and communications have been at the lowest with 340.3 billion won and 198.4 billion won, respectively.

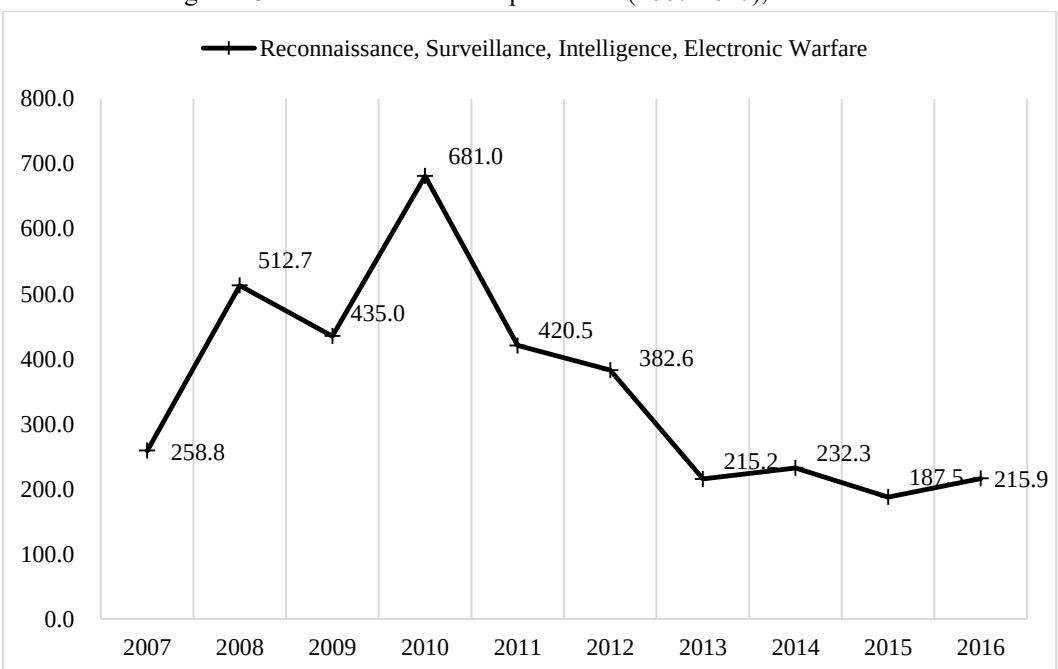
Figure 27 South Korea's Force Improvement Expenditures (2007-2017), in billion won



Source: DAPA. *Defense Acquisition Program Statistical Yearbook*, annual series; DAPA. *Fiscal Year Balance*, annual series.

To clarify, the fluctuations of ISR investments in contingent to OPCON transfer plans can be observed as in Figure 28. With the repeated postponements of transfer on February 23, 2007, to April 17, 2012, followed by another one on June 26, 2010, to be transferred by 2015, the FIB allocated for ISR capabilities took a drastic fall from 681 billion won in 2010 to 420.5 billion won in 2011. With about sixty percent cut from the previous year, the budget plunged further. When OPCON transfer schedule was again delayed on October 23, 2014, this time to indeterminate "conditioned-based" transfer, the ISR budget fell to the lowest since 2006, to allocating 187.5 billion won for FY2015.

Figure 28 South Korea's ISR Expenditures (2007-2017), billion won



Source: DAPA. *Defense Acquisition Program Statistical Yearbook*, annual series; DAPA. *Fiscal Year Balance*, annual series.

As result, alike in the case of the BMD, South Korea's autonomous armaments in the ISR have remained restrained to the lower-end 'tactical' weapons systems including reconnaissance aircrafts and UAVs[75] that provide limited detection range beyond the DMZ. Although South Korean government announced in August 2017 to resume its plans to field five military satellites to be operable by 2023 – the "425 Project" (Yonhap News 2017), the program has seen continuous delays. Plans to acquire advanced ISR assets including the Global Hawk have been postponed repeatedly as South Korean governments spat over the budget.

Given the situation, the limited detection range of existing fixed-wings has kept the US forces indispensable in garnering information and surveillance on North Korea's major nuclear and missile test sites, including Tongchang-ri (missile launch site), Punggye-ri (nuclear test site), Sinpo (SLBM test-launch and submarine base), and the Pukchang Airfield (major launch sites of Hwasong-12 and -14 ballistic missiles) (Pinkston 2014). Without "cross-referencing to information collected by" the US's Keyhole (KH) and DSP military satellites and stationing of advanced reconnaissance aircrafts (U-2S stationed at Osan base, RC-7 at Pyeongtaek Humphreys), as well as the RC-135 reconnaissance aircraft stationed at Japanese Okinawa-Kadena air base, information collected from South Korea's existing ISR

[75] The 'Baekdu' (Hawker-800SIG), 'Kumkang' (Hawker-800RA), and the RF-16 (replacing the old fleets of RF-5As in operation since 1972; and RF-4Cs in operation since 1990), as exemplary have been limited to observing 100 kilometers range into North Korea beyond the Military Demarcation Line (MDL).; RF-5As (in operation since 1972) and RF-4Cs (in operation since 1990) have been decommissioned completely in year 2007 and 2014, respectively.

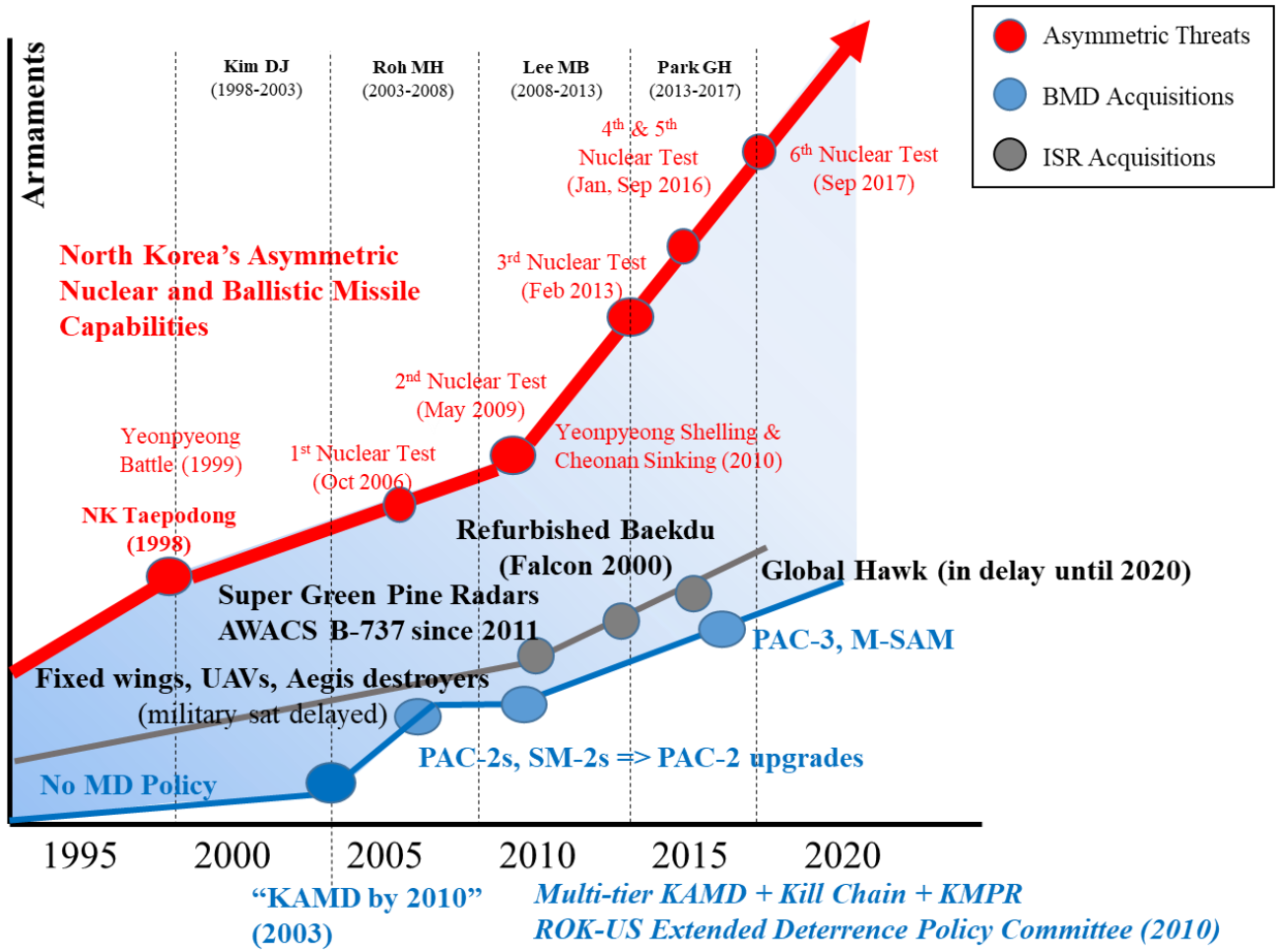
assets are allegedly “insignificant,”[76] Table 19.

Table 19 South Korea's BMD and ISR Capabilities

Weapons		**Details**
BMD	US	**PAC-3, PAC-3 MSE, THAAD**
	ROK	**Lower-tier, terminal phase KAMD** Ground-based: PAC-2, PAC-2 upgraded PAC-3, *M-SAM* (final stage of development by 2017), *L-SAM* in development Sea-based: SM-2
Satellites	US	**Keyhole (KH) Satellites, DSP (Defense Support Program) Satellites, SBIRS (Space-based Infrared System)**
	ROK	‘425 Project’
Other ISRs	US	**Advanced**
		U-2S, RC-7B, Aegis & Global Hawks (not permanent) + RC-135 (USFJ)
	ROK	**Low-High Mix**
		In ties to KAMD: - Peace Eye (Airborne Early Warning Aircraft) - Green Pine Radars (Israel) - AN/SPY-1D (aegis destroyers) Tactical UAVs: - Songgolmae (homegrown, 1991 -> operation since 2002), Harpy, RemoEye - Searcher (Israel), Heron (Israel) Tactical ISR/SIGINT ac: - Baekdu & Kumkang, RF-16, Refurbished Baekdu (Falcon 2000) AEW&C: B-737 (4, delivered since 2011)

[76] Anonymous military official. Interview by author, November 21, 2017.

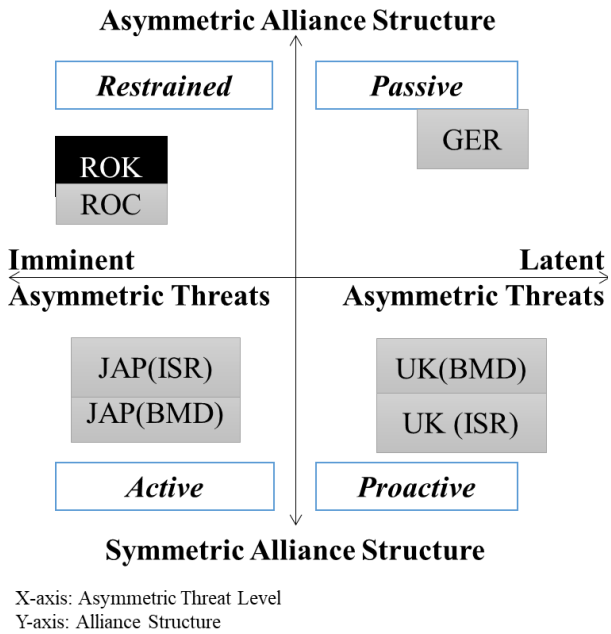
Figure 29 Summary of South Korea's BMD and ISR Acquisitions



Source: Illustrated by author.

3. Summary of Findings

Figure 30 Summary of Cross-national Comparison



X-axis: Asymmetric Threat Level
Y-axis: Alliance Structure

Placed in cross-national context to other US allies, Figure 30, South Korea has shown relatively 'restrained' armaments in autonomous BMD and ISR capabilities. Despite increasing imminence of asymmetric nuclear and ballistic missile threats from North Korea, the asymmetric division of force structure within the ROK-US alliance has reinforced South Korea's reliance on the US's provision of extended nuclear deterrence and stationing of advanced BMD and ISR equipment. Yet, rather than mere systemic outcome (given threats and alliance structure), policy leaders' vacillating threat perception on North Korea's asymmetric threats and policy preference for arms acquisition policy have accumulated to South Korea's recurrence

to alliance-reliant armaments in the BMD and ISR. The policy leaders' concerns for budget, preference for other offensive strike capabilities, and increasing strategic concerns on inter-Korean reconciliation and ROK-PRC relations have reinforced the structural influence from the imbalance in asymmetric capabilities with North Korea and the asymmetric division of force structure within the ROK-US combined defense system in determining South Korea's arms acquisition patterns.

South Korea's restrained armaments in the BMD and ISR drew stark contrasts to Japan and Taiwan, regardless of how the three major US allies and partners in the Northeast Asian region have shared similar changes in increasing asymmetric threats and transformation in the US's strategy in the region, Table 20. The higher convergence on threat perception on asymmetric threats upon security junctures including North Korea's ballistic missile and nuclear tests and China's military contestations in the region has been critical in reinforcing Japan's 'active' armaments in the BMD and ISR.

Although Taiwan has shown 'restrained' armaments in comparison to Japan, Taiwan revealed more 'active' armaments in both BMD and ISR when juxtaposed to South Korean case. Taiwan has actively armed for BMD, even at the expense of other capabilities, given the overwhelming power asymmetry between Taiwan and China, absence of formal security treaty with the US (asymmetric alliance), contesting for formal recognition as independent state in the international community. Driven by the rationality for symbolical capability aggregation from fostering close alliance ties in armaments with the US, Taiwan managed for at least more active armaments in the

BMD and ISR than South Korea, despite their strenuous resource restraints with arms spending limited to about a third of South Korea's military expenditures.

Table 20 Cross-national Comparison on BMD & ISR Capabilities: Overview

Weapons		ROK	Japan	Taiwan
Military Satellites	US	**O**	**O**	**O**
		Keyhole (KH) Satellites, DSP (Defense Support Program) Satellites, SBIRS (Space-based Infrared System),		
	Ind	**X**	**O**	**O**
		Commercial satellites	IGS (Information Gathering Satellites)	Formosat-5
BMD	US	**Advanced**	**Advanced**	**X**
		PAC-3, THAAD	PAC-3, SM-2/3	-
	Ind	**Lower-end**	**Advanced**	**Low-High Mix**
		PAC-2 (+upgrades), SM-2	PAC-2/3, SM-2/3	PAC-2/3. SM-2
Recon. Aircrafts	US	**Low-High Mix**	**Advanced**	**X**
		U-2S, RC-7B + RC-135 (USFJ)	RC-135, E-3B Sentry (Kadena Air Base)	Not Stationed
	Ind	**Lower-end**	**Low-High Mix**	**Lower-end**
		Baekdu (Hawker-800SIG - SIGINT), Kumkang (Hawker-800RA - IMINT), PeaceEye (E-737, AWACS), RF-16 (IMINT)	E-767 (AWACS), E-2C, EP-3 (SIGINT) RF-4E/EJ (Recon ac), YS-11EB (ELINT)	Mastiff III (light UAV) RF-5E (ISR Ac) E-2T Hawkeye(AEW&C)
Radars	US	**O**	**O**	X
		THAAD, Aegis (AN/SPY-1D)	X-band Radar (AN/TPY-2), Aegis (AN/SPY-1D)	Not Stationed
	Ind	**Limited Scope**	**Nation-wide Scope**	**Limited Scope**
		Aegis (AN/SPY-1D) Green Pine Radar	Aegis (AN/SPY-1D) JADGE (nationwide)	AN/TPQ-37 Firefinder AN/FPS-115 PAVE Phased Array Warning System

Source: Listed by author in reference to official reports, IISS Military Database, and SIPRI Database.

Intriguing implications could be drawn from how other US allies have shown higher correlation between the structural (independent) variables and armament patterns in the BMD and ISR. Japan and Taiwan have been the explicit cases. Germany has been another typical case, wherein the state pursued 'passive' armaments in the BMD and ISR, given the overall threat latency from asymmetric nuclear and ballistic missile threats. The limited threat perception and pervasive post-militarism in arms acquisitions among the political stripes have reinforced such passivism in the state-of-the-art military ventures and asymmetric reliance on the US than autonomous armaments. As in the case of the UK, despite latent threats and symmetry in alliance based on its indigenous nuclear deterrence capabilities, the policy leaders' consensus on alliance management, technology acquisitions, and interest in maintaining the UK's regional and global security role have impelled the UK to seek 'proactive' cooperation in BMD with the US and armaments in the ISR.

South Korean case has indeed become more distinctive in this respect, as it resembled more to the US allies like the UK, which under latent asymmetric threats, particularly in the realms of BMD tried to pursue self-reliant, hedging strategy, while limiting cooperation with the US to joint infrastructural cooperation. South Korea also resonated the passive arms acquisition pattern of Germany. South Korea retains distinctive divergence from the US allies under imminent asymmetric threats, wherein the countries like Taiwan and Japan have been more active in autonomous armaments. Placed in such cross-national context, South Korea retains its distinctive 'complacency' for alliance-reliant BMD and ISR capabilities as most of other US

allies, regardless of given constraints and threat latency, showed higher level of autonomous armaments in the BMD and ISR. Through cross-national contextualization, this section of study has been an attempt to explain the variation among the US allies through varying combination of *common* variables, placing South Korea's arms acquisition pattern in a more global context.

IV. SOUTH KOREA'S RESTRAINED ARMS ACQUISITION IN CROSS-REGIME CONTEXT

1. Restraint under Kim Dae-jung Administration (1998-2003)

The Kim Dae-jung administration, coming into office in February 1998, retained overall reluctance in acquiring the state-of-the-art BMD and ISR capabilities. At the foundation of restraint lied President Kim Dae-jung's landmark Sunshine Policy, which, newly put forth a reconciliatory approach to North Korea. As the first progressive candidate to assume office in South Korean government, the Kim administration presented an alternative way of understanding North Korea and belief that the policy of positive-sum approach, engagement, and mutual recognition can bring changes in North Korea. With the ideals of Sunshine policy, which placed primacy on "peace over war" (Kim Dae-jung 2010), President Kim perceived arms build-up and alliance as double-sided swords for both security and the vicious cycle of arms race and military confrontation on the Korean Peninsula, regarding "reconciliation, interaction and cooperation" as the "best possible option" (Moon Chung-in and Boo Seungchan 2013: 127) instead in "lead[ing] North Korea down a path toward peace, reform and openness."[77] With the reconciliatory Sunshine Policy

[77] Speech delivered by President Kim Dae-jung on April 4, 1998, at the School of Oriental and African Studies, London University.; Office of the President, the Republic of Korea (1999: 63-64).

at the forefront of national agenda, the Kim Dae-jung administration lended little room for new investments in the state-of-the-art BMD and ISR capabilities. With emphasis on economic revival from the 1997 Asian Financial Crisis and setting amicable relations with regional powers including China as critical pillar of the administration's Sunshine policy, North Korea's incremental asymmetric threats and military provocations have not ensued with commensurate interests in politically thorny BMD and expensive ISR capabilities.

1) Reconciling with Non-nuclear North Korea

The reluctance for the BMD capabilities under the Kim Dae-jung administration has accumulated upon the early debates in the 1990s, when North Korea's series of Nodong ballistic missile tests on May 29, 1993, followed by the first nuclear crisis in June 1994, prompted the USFK to station five PAC-2 batteries. With the start of the USFK's deployment of Patriot systems in 1994, debates reinstated within South Korean Ministry of National Defense, particularly as the discussions coincided with the need to replace the military's aging Nike-Hercules air-defense missiles, known as the surface-to-air missile experimental "SAM-X" program. Yet, the earlier discussions have been predominated by concerns over, very simply, the cost-effectiveness of the program. Given Seoul's geographic proximity to North Korea's forward-deployed long-range artilleries and rockets across the border that place

Seoul within forty to fifty kilometers of target-range, South Korea's armaments took priority in offensive missile capabilities that were perceived as cheaper, cost-effective assurance of second-strike capabilities, enough to deter and dissuade North Korea from missile provocations that remained at the incipient phase of development.

Diplomatic concerns of South Korean government also became more multidimensional as President Roh Tae-woo's Nordpolitik and President Kim Young-sam's Globalization set engagement with North Korea's traditional allies including former Soviet Union (Russia) and China as important means for the stability of the Korean Peninsula. Thus, while the USFK's deployment of Patriot batteries invigorated discussions on South Korea's development of new air and missile defense program, South Korea's considerations included not only the US-origin high-end expensive Patriot systems, but also Russia's Almaz-Antey S-300 (SA-10 within NATO), which was offered as part of the so-called "bul-gom" weapons deal. To pay down its heavy debt incurred from South Korea in the early 1990s, Russia proposed for technology transfer and sales of discounted military equipment in return. The negotiations on possible license production of S-300 continued onto October 1996, until the US's concerns for interoperability between the US and South Korea's defense systems pressured the South Korean government to forego such an option.

Such US's "advice, or pressure," as Joshua H. Pollack (2017) put, on South Korea to acquire or join the US-led BMD initiatives have been present, well before North Korea's Nodong missile tests in 1993. Dating back to April 1985, the US Secretary of Defense Caspar Weinberger asked South Korea to participate in the SDI

put forth during the Reagan administration. While the basic ideas of developing networked, interceptive technologies against ballistic missiles remained, the SDI scaled down to the so-called Global Protection Against Limited Strikes (GPALS) under President George H. W. Bush, followed by the Clinton Administration's Ballistic Missile Defense Initiative (BMDI). North Korea's Nodong missile tests in May 1993 ensued with the US Deputy Secretary of Defense John Deutsch's proposal to launch joint research team during his visit to Seoul in September 1993. In June 1996, the USFK commander (nominee at the time of statement) John H. Tielelli, Jr. stated that "TMD" is needed to be deployed on the Korean Peninsula during his speech at the Senate confirmation hearing. In April 1997, Secretary of Defense William Cohen visited Seoul to again demand South Korea to purchase Patriot missiles.

By the time when Kim Dae-jung administration came into office in 1998, the cost concerns that predominated the 1990s aggravated as the 1997 Asian Financial Crisis afforded only 0.1 percent increase in defense budget for 1998. Considering how South Korea accumulated to an average of about eleven percent annual growth in defense budget from 1990 to 1997, the Kim Dae-jung administration emerged upon drastic turn in South Korea's defense budget trends. The portion of defense budget in total government budget dwindled to 18.3 percent in 1998 from an average of twenty-three percent from 1990-1997, about 2.4 percent decrease from 1997 (20.7 percent). In 1999, South Korea for the first time experienced actual defense budget cut of 0.4 percent, Table 21.

Table 21 South Korea's Defense Budget (1990-1999), in billion won

Year	Defense Budget	DB Increase (%)	DB/GDP (%)	DB/Government Budget (%)
1990	6,637.80	10.4	3.36	24.2
1991	7,476.40	12.6	3.13	23.8
1992	8,410.00	12.5	3.08	25.1
1993	9,215.40	9.6	2.97	24.2
1994	10,075.30	9.3	2.75	23.3
1995	11,074.40	9.9	2.58	21.3
1996	12,243.40	10.6	2.54	20.8
1997	13,786.50	12.6	2.6	20.7
1998	**13,800.00**	**0.1**	**2.63**	**18.3**
1999	**13,749.00**	**-0.4**	**2.38**	**16.4**

Source: Ministry of National Defense, Republic of Korea, *Defense White Paper,* annual series.

The first two years of the Kim Dae-jung administration, in this backdrop, called for what can be interpreted as 'three-pronged restraints' in armaments, calling for armament priorities in enhancing "existing capabilities," "homegrown armaments," and "minimizing" foreign arms purchases that require foreign capital (ROK National Assembly Secretariat 1998: 8). Large foreign military purchase programs were indeed postponed in the first year of Kim Dae-jung government, including the payment of 750.1 billion won for FMS agreement with the US to be paid after 2000, in order to curtail loss from South Korea's drastic depreciation in its

currency at the time (ROK National Assembly Secretariat 1999c: 10-11). The 1999 budget plan as presented by Defense Ministry at the National Defense Committee on September 11, 1999, again placed emphasis on "utmost minimization" of acquisition programs requiring foreign capital (ROK National Assembly Secretariat 1998: 35). As Defense Minister Chun Yong-taek stated, "Economic revival" was "prioritized over any other national agendas in 1999."[78] The Kim Dae-jung administration's first formal refusal to acquire nor join the US-led BMD (then TMD) system in 1999, in response to North Korea's Taepodong-launch in 1998, set upon such severe economic conditions that revamped South Korea's concerns on the cost-effectiveness of the system.

Aside from the economic factor in setting the parameters of South Korea's armament patterns in BMD, however, this dissertation finds that the cost concerns have been reinforced in foundation by the administration's signature Sunshine Policy. Putting forth a reconciliatory approach to North Korea under the conviction that the policy of positive-sum approach and engagement is the best possible alternative,[79] arms spending in general under the Kim administration remained limited, in ties to the government's emphasis on economic revival from the 1997 Asian Financial Crisis. The statement by Prime Minister Kim Jong Pil at the National Assembly is an exemplary reflection of the point, as he mentioned that "our government in foundation hopes for resolutions in North Korea's missile problems through dialogue

[78] Response by then Defense Minister Chun Yong-taek, see, ROK National Assembly Secretariat (1998: 70).
[79] Speech delivered by President Kim Dae-jung on April 4, 1998, at the School of Oriental and African Studies, London University.; Office of the President, the Republic of Korea (1999: 63-64).

and cooperation."[80]

Interrelated, the Kim Dae-jung administration also inherited South Korea's threat concerns on North Korea's conventional arsenal than the asymmetric missiles per se. Recognizing the "missile problems" to be resolved through dialogues between "the US and North Korea," as stated by Prime Minister Kim Jong-pil (ROK National Assembly Secretariat 2001a: 55), Defense Minister Kim Dong-shin in clarifying South Korea's position on missile defense stated that the "more imminent threats" for South Korea are "North Korea's artilleries at the Military Demarcations Line (MDL)."[81] As the defense budget bill for FY2000 highlights, the ninety-six percent of the FIB – 5.1 out of 5.3 trillion won – have been directed to continued programs to enhance the capabilities of existing defense systems including the self-propelled artilleries. While the rest of the budget, 194.8 billion won, has been allocated to new arms procurement programs, the budget went to acquiring additional KF-16 fighter-jets, '636 project' (acquiring three kilo-class submarines from Russia – 20 billion won), and other ground and ship-based conventional strike capabilities (135.5 billion won) (ROK National Assembly Secretariat 1999d: 18-19).

When the Sunshine Policy seemed to prevail in ameliorating tensions in inter-Korean relations by the turn of the landmark inter-Korean summit held in June 2000, the Kim administration has shown continued cuts in force improvement expenditures throughout the term. While the first two years of cuts in 1998 and 1999

[80] Prime Minister Kim Jong Pil, see, ROK National Assembly Secretariat (2001a: 55).
[81] Then Defense Minister Kim Dong-shin, ROK National Assembly Secretariat. (2001c: 54).

were made for recovery in economy and cover the shortfalls in operating costs of the military, the years after June 2000 inter-Korean summit have shown further cutbacks. The 2001 force improvement expenses, for instance, reflected 2.4 percent decrease from the previous year, and the portion of total force improvement spending from GDP saw continued decline from 0.97 percent in 1998 to 0.84 percent in 2000, and further down to 0.72 percent by 2002, Table 22.[82]

Table 22 Force Improvement Expenditures (FIB) under Kim DJ Administration, in trillion won

Year	**Defense Budget**			**GDP**	**FIB/GDP (%)**	**DB/GDP (%)**
	Force Improvement Budget (FIB)	Force Operating Cost	Total			
1998	5.1	8.7	13.8	524.5	0.97%	2.6%
1999	5.2	8.5	13.7	576.9	0.91%	2.4%
2000	5.3	9.1	14.4	635.2	0.84%	2.3%
2001	5.2	10.2	15.4	688.2	0.76%	2.2%
2002	5.5	10.9	16.4	761.9	0.72%	2.1%

Source: Ministry of National Defense, Republic of Korea, *Defense White Paper*, annual series.

Also, in 2001, the actual force improvement expenditures – 5.3 trillion won – incurred about 11.2 percent of cutbacks in actual spending from about 5.9 trillion won originally approved by the National Assembly National Defense Committee in 2000, Table 23 (Ministry of National Defense, Republic of Korea 2002: 146). Also,

[82] Ministry of National Defense, Republic of Korea, *Defense White Paper*, annual series.

2.4 percent of the FIB have been diverted to spending on enhancing labor conditions of the military personnel (ROK National Assembly Secretariat 2000b: 8-9).

Table 23 Cuts in Force Improvement Budget (FIB) during Kim DJ Administration, in billion won

FIB	1998	1999	2000	2001	2002
Planned	5,309.2	5,799.6	5,660.6	5,875	5,701.9
Cut	219.1	569.2	316.9	660.9	226.3
Actual FIB	5,090.2	5,230.4	5,343.7	5,214.1	5,475.6
Percentage of FIB Cuts (%)	4.1%	9.8%	5.6%	11.2%	4.0%

Source: Ministry of National Defense, Republic of Korea (2002: 146).

Reconciling North Korea during the Kim Dae-jung administration also left the BMD question highly contingent to South Korea's diplomatic relations with China and Russia. South Korean representatives, as anonymous interviewee recalled, repeatedly conveyed the Kim administration's concerns during meetings with the US embassy delegates in Seoul in 1998, that South Korea's joining of the "ongoing TMD program between the US and Japan" would trigger strong oppositions from China.[83] Considering China as critical pillar of successful implementation of the Sunshine Policy – bringing out North Korea from isolation and repeated patterns of military confrontation – North Korea's incremental asymmetric threats and military provocations have not ensued with commensurate interests in BMD as it remained

[83] Anonymous interview by author, October 30, 2018.

politically thorny in ROK-PRC relations. As South Korea's formal announcement in March 1999 stated, South Korea decision to not join nor acquire the US-led BMD systems was set upon not only the problems of economic and technological complexity of the weapons system, but the high likelihood of raising "concerns from neighboring countries."[84] Resisting the US's call for South Korea's participation in the US-led BMD (then TMD) architecture in the region, Defense Minister Chun Yong-taek urged "TMD" not effective in defense against immediate North Korean threats and prodded how "the USFK's Patriot missiles can be used, when necessary, not only to protect the USFK but also entire Korean Peninsula including the metropolitan areas."[85]

The administration's reconciliatory pursuit towards North Korea also placed its BMD options under the influence of Russia. As the US President George W. Bush newly inaugurated in 2001, announcing determination to build networked BMD system that would include the "theater missile defense (TMD) system" with Japan and the region, the Kim administration's main concerns lied in how President Bush's hardlined approach to North Korea and outward pressure for B(T)MD system in the region would cripple the administration's previous efforts to convince North Korea to give up their asymmetric arsenal. Preserving the Sunshine Policy at the forefront of the national agenda, President Kim in meeting with Russian President Vladimir Putin in February 2001 came down to a joint statement that included the phrase that the

[84] Statement by the ROK Ministry of National Defense, announced by Defense Minister Chun Yong-taek, March 1999.

[85] Response by then Defense Minister Chun Yong-taek, see, ROK National Assembly Secretariat (1998: 70).

1972 US-Soviet Anti-Ballistic Missile Treaty (ABM), was important for the "strategic stability" of the world.[86] Considering that the treaty was striked to ban anti-missile weapons systems, the joint statement signaled South Korea's opposition to the BMD system. Although President Kim Dae-jung in his first meeting with President George W. Bush in the following month, in March 2001, tried to dilute the significance of the statement, that the phrase "in no way reflects [South Korea's position] on the National Missile Defense (NMD) issues," and how South Korea "resisted to the very end" against Russia's "very strong[…] wish to include such a phrase" (US Office of the Press Secretary 2001), it was clear how Kim administration's determination in reconciling North Korea took precedent in both its armament and alliance options in BMD.

Furthermore, reconciling North Korea's missile problems through "dialogue," as Prime Minister Kim Jong-pil stated (ROK National Assembly Secretariat 2001: 55), the armament priorities also became increasingly distant from meeting direct security threats from North Korea under the Kim Dae-jung administration. President Kim Dae-jung in his March 19 speech to graduates of the Naval Academy at Chinhae in 2001 put forth building the so-called "blue navy force" to protect South Korea's national interests and international peace beyond the regional waters. As the 2001 defense budget plan highlighted, the Kim administration began to shift the armament focus from North Korea to wider array of potential threats, highlighting arms build-up in maritime and air forces beyond the Korean Peninsula. Demonstrating the

[86] February 27, 2001, the Blue House.

confidence that the Sunshine Policy will succeed, the most of the declining FIB went to naval and air force developments, spending about 4.9 trillion won in 2001 (out of 5.3 trillion total force improvement expenditure) to continued investments in enhancing South Korea's conventional capabilities, including the Korean Destroyer eXperimental (KDX) destroyers. The rest of the 2001 FIB – 335 billion won – went to newly initiated programs, including the AH-X program for next-generation helicopters (ROK National Assembly Secretariat 2000b: 16-17).

Signposts of how North Korean threats become intervened by the government's reconciliatory North Korea policy can be further observed in other occasions, such as continued emphasis on engagement with North Korea despite the outbreak of first battle of Yeonpyeong in June 1999. Then Minister of Unification Lim Dong Won, keyman of President Kim's Sunshine Policy, stated that despite the military clash, "the government finds it advisable" to continue its "reconciliation and cooperation together with the efforts to acquire North Korea's pledge to prevent recurrence of provocations" – pursuit for more "contacts, dialogues, negotiations, and cooperation to alleviate such tensions" (ROK National Assembly Secretariat 1999a: 16). According to Director of National Intelligence Service (NIS) Ko Young-koo's briefing during closed intelligence committee meeting, leaked to public on July 9, 2003, North Korea has conducted about seventy times of heavy bombing experiments since 1997 and South Korean government has been aware of it since April 1998. Yet, despite North Korea's disclosure on its possession of uranium enrichment program in October 2002, Minister of Unification Jeong Se-hyon stated

"cutting-off inter-Korean relations is more likely to push the Korean Peninsula into crisis" (ROK National Assembly Secretariat 2002: 20).

2) Reinforcing Alliance-reliant Armaments

(1) Alliance-reliant BMD from Resistance to Limited Concessions

In brief, South Korea's BMD capabilities against North Korea's increasing asymmetric arsenal rested on the USFK's Patriot batteries (PAC-2) throughout the Kim Dae-jung administration. As elaborated above, such alliance-dependence arose from the government's initial resistance and refusal to acquire nor join the US-origin BMD systems.

Yet, while the government's reconciliatory policy lied at the foundation of its restraint in BMD, the Kim administration's efforts to make the Sunshine Policy survive under the newly inaugurated Bush administration also pushed the South Korean government to make late concessions towards the US's call for BMD systems. Opting for alliance-dependence in place of its own armaments in the BMD, with limited concessions in the latter years of the government, South Korea's arming towards BMD, although subtle and reluctant, can be observed.

To elaborate, in implementation of the Sunshine policy, the Kim Dae-jung

administration's no-B(T)MD policy came across serious challenges when President George W. Bush came into the Oval Office in 2001. Even before the outbreak of 9/11 in 2001 that led President Bush to designate North Korea as one of the "axis of evil" and "rogue" states, President Bush has been outward with his skepticism to reconciliatory policy in general. Seeing the Clinton Administration's 1994 Agreed Framework as policy failure, President Bush in his first meeting with President Kim in March 2001 clearly delivered his "skepticism" on North Korea, that it is still "shipping weapons around the world" and "their ability to develop and spread weapons of mass destruction [have not] stopped" (US Office of the Press Secretary 2001). The ROK-US relations at the meeting were also at unease from South Korea's joint statement with Russia in the previous month that signaled South Korea's support for the 1972 ABM treaty.

Concessions seemed inevitable as President Kim Dae-jung strived to reconfirm the US's continued support for South Korea's Sunshine Policy during his first meeting with President Bush. President Kim Dae-jung, prior to the visit to Washington in March, announced that although limited, South Korea would develop its "own MD system" that are specific to South Korea's "own conditions" and that the joint statement with Russia did not in any way signal South Korea's opposition to BMD. In April 2001, Minister of Foreign Affairs and Trade Han Seung-soo also rendered increasing support for the US's BMD initiative, that "the government will closely cooperate with the US to make the US's NMD provide positive influence on the security and peace of the Korean Peninsula and reconciliation and cooperation in

inter-Korean relations" (ROK National Assembly Secretariat 2001b: 38). The 2001 defense budget plan that outlined to newly build blue navy forces indeed included the acquisition plans to acquire standard-missile equipped aegis destroyers, which the Bush administration mostly welcomed as South Korea's first step towards establishing maritime BMD system. During a closed meeting between the US and South Korean high-level officials from foreign and defense ministry in October 2002, convened by the support of the US's Missile Defense Agency, both sides agreed for "incremental" construction of MD in cooperation. The 2002 budget bill in allocating FIB for SAM-X included deliberations for PAC-3 (ROK National Assembly Secretariat 2001d: 2). Juxtaposed to the government's initial remarks that T(B)MD are ineffective to South Korea's deterrence against North Korean threats, incremental, although implicit, changes in the government's approach to BMD-related armaments are observable.

Regardless of the concessions, however, actual investments in BMD remained distant. Out of the 2002 actual expenditures – 5.6 trillion won, 105.2 billion won have been redirected from FIB budget to make up for operating costs (ROK National Assembly Secretariat 2003c: 21). 1.1 trillion won went to equipment maintenance cost, 148.6 billion won of defense sharing budget for construction costs went to building non-military facilities of the USFK, and FMS repayment budget fifty-one billion won went to repay weapons system that have been in the roll out for the past twenty years. After the Second Yeonpyeong battle on June 29, 2002, 20.5 billion of the FIB have been diverted to related expenses (ROK National Assembly

Secretariat 2003c: 24). Despite the Kim administration's relative transition towards BMD acquisitions in 2001, the FIB budget for 2002 cannot be hardly said to have gone to implementing actual investments in the sector. From resistance to limited concessions under the US-reliant BMD capabilities, South Korea pursued reluctant armaments in the sector.

(2) Alliance-reliant ISR Capabilities

Although North Korea's Taepodong-launch over Japan on August 31, 1998, renewed the Kim administration's interest in ISR capabilities, the Kim Dae-jung administration's armaments in the ISR remained within the parameters of the ROK-US combined defense system. South Korea's formal announcements after North Korea's military provocations have, for instance, repeatedly stressed the 'seamless' ROK-US cooperation in response to the incidents. At the national assembly plenary session held on three days after North Korea's Taepodong-launch on June 15, 1999, Defense Minister Cho Sung-tae claimed South Korea's response and military readiness at sea have been "perfect than ever" upon "the ROK-US combined defense system" (ROK National Assembly Secretariat 1999a: 25). Alliance-reliance has been presented as pragmatic, considering how the ISR realms requires "enormous budget and time," according to Defense Minister Cho Sung-tae. Thus although South Korean military is in pursuit of "long-term goal" in acquiring autonomous ISR capabilities,

there remains limitations" making the ROK-US combined defense system indispensable (ROK National Assembly Secretariat 2000a: 14). His successors offered similar statements, as Defense Minister Kim Dong-shin reconfirmed that South Korea's defense against North Korea's military threats bases on "ROK-US combined defense system" – by "combined operation" of ROK-US intelligence assets, South Korea maintains "twenty-four hour precision surveillance" (ROK National Assembly Secretariat 2001b: 40). By the end of the Kim Dae-jung administration, Prime Minister Kim Suk-soo also testified at the National Assembly National Defense Committee, that reliance on the US's security provisions remains vital to South Korea's defense system as it is "very difficult" to fill the vacuum on its own and will be "economically severe" should South Korea try to do so (ROK National Assembly Secretariat 2002: 31).

The Kim Dae-jung administration's major ISR procurements in this backdrop have been restrained to the rollout of Baekdu and Kunkang aircrafts commissioned during the Kim Young-sam administration, and annual spending on acquiring tactical UAVs since the spending about 19.4 billion won as response to the first Yeonpyeong battle in 1999 (ROK National Assembly Secretariat 2003c: 24). Shortfalls in funding remained as the enduring norm in South Korea's ISR acquisitions. The budget for ISR capabilities in 1998, as exemplary, has been constrained to 82.8 billion won, about two percent of total FIB. Considering how two percent of the FIB in 1997, 76.1 billion won, were spent solely on meeting the loss arising from drastic fall in foreign exchange rates, South Korea's investment in the

ISR remained meager at the outset of the administration. For the defense budget plan for 1999, only two new projects have been introduced for ISR capabilities with 4.2 billion won – 0.1 percent of total FIB for 1999 (ROK National Assembly Secretariat 1999d: 18-19). Maintenance of "24hrs surveillance" and preparation against North Korea's missiles, according to Defense Minister Chun and Prime Minister Kim Jong-pil, was allegedly provided by the "ROK-US combined intelligence forces" (ROK National Assembly Secretariat 1998: 70) such as the U-2 (ROK National Assembly Secretariat 1999b: 85).

The sluggish progress in South Korea's ISR armaments ran parallel to the administration's reconciliatory policy towards North Korea, which afforded mid- to long-term policy in armaments than the need for immediate arms build-up. Partly it was the overall perception that South Korea has already acquired military superiority over North Korea as early as in the 1980s, according to Hamm Taik-young (1999; 2005), as well as the remnants of the Asian Financial Crisis that restrained South Korea's new investments in ISR realms slow and limited. The Kim Dae-jung administration's national defense agenda, entitled building "new national defense for the twenty-first century" (ROK Ministry of National Defense 2002: 32-33), was in essence directed towards mid- to long-term policy goals to prepare for various threats beyond traditional North Korean military aggressions. Building upon the 1996 National Space Development Plan which aimed for indigenous production and launch of small satellite by 2010, the Kim Dae-jung administration began to seriously engage in research and development for launch-rockets since 1999. In December

2000, the Kim administration revised the Space Development Basic Plan, laying out step-by-step plans to develop satellite launch vehicles (SLV) and construction plans for space center. Rather than procuring costly BMD and ISR armaments, the Kim Dae-jung administration placed emphasis on developing indigenous missile and space related programs. Negotiating with the US to revise the previous 1979 ROK-US Memorandum of Agreement (MoA), which limited South Korean ballistic missile range to 180 kilometers and 500 kilograms in payload in exchange for the US's provision of technical assistance for South Korea's missile development, the Kim administration replaced the MoA with new ROK-US missile guidelines in 2001. The missile range extended to 300 kilometers. While the payload continued to be limited for 500-kilogram payload, the new missile guidelines lifted the cap on payload for cruise missiles as well as the range of cruise missiles under 500-kilogram payload.

With extended range and payload under the new ROK-US missile guidelines, the Kim Dae-jung administration also agreed to join the Missile Technology Control Regime (MTCR) in 2002, which the South Korean government has previously refused to do so from the fear that the MTCR will place bars to South Korea's indigenous development of missile capabilities. Indeed, rather than advanced and costly BMD and ISR capabilities, missiles and other precision-strike capabilities have taken primacy in South Korea's armament choices as cheaper alternative to the BMD and ISR capabilities. As Prime Minister Kim Jong-pil stated, South Korea's response to North Korea's missile threats included reinforcing the ROK-US combined defense system as well as procuring 300km-range missiles that can reach

up to Pyongyang and thereby function as cost-effective deterrence to North Korea's missile attacks (ROK National Assembly Secretariat 1999b: 29).

2. Fleeting Pursuit for Self-reliant Armaments under Roh Moo-hyun Administration (2003-2008)

1) Continued Reconciling with North Korea

Despite the standoff in inter-Korean relations arising from North Korea's disclosure of its HEU program in 2002 and withdrawal from the NPT on January 10, 2003, the Roh Moo-hyun administration, coming into office in February 2003, put forth its 'Peace and Prosperity Policy.' Inheriting Kim Dae-jung administration's Sunshine Policy and placing primacy in inter-Korean reconciliation at the forefront of the national agenda, the Roh administration strived to seek peaceful resolution of North Korea's nuclear and ballistic missile problem through dialogue and engagement (diplomacy) than commensurate armaments.

More explicit than Kim Dae-jung administration, such reconciliatory policy toward North Korea intervened in perceiving North Korea's increases asymmetric capabilities. As one of the earlier remarks by the policy executives of the government, Prime Minister Goh Kun in response to questions on the government's assessment of North Korea's nuclear problem insisted that despite North Korea's alleged announcement on its possession of uranium enrichment program, it remains unclear whether North Korea possesses de facto nuclear capacity (ROK National Assembly

Secretariat 2003b: 28). Secretary General of National Security Council (NSC)[87] Kwon Jin-ho's remarks at one of the plenary session at the national assembly is particularly notable, as his response to the question, "is North Korea our main adversary," stated that North Korea is "main threat than main adversary" (ROK National Assembly Secretariat 2004a: 25). To the same question, then Defense Minister Yoon Kwang-woong concurred, although ambiguously, that "the Ministry of National Defense *may* interpret [North Korea] as 'main military threat'" (ROK National Assembly Secretariat 2004a: 25). During the National Defense Committee session held at the National Assembly on November 18, 2004, it became a heated debate whether or not the government perceived North Korea as main adversary. Although Defense Minister Yoon Kwang-woong again refrained from direct answer to the question, implicitly conveyed his position that the use of the term is more or less outdated or inappropriate as the defense white papers of other countries do not use terms like main enemy or adversary (ROK National Assembly Secretariat 2004c: 15).

Inheriting the Kim Dae-jung administration's perception that North Korea's pursuit for nuclear and ballistic missile capabilities is in essence caused and to be resolved within the US-DPRK relations, Minister of Unification Chung Dong-young described that the second nuclear crisis erupted in 2002 was North Korea's pursuit for leverage in negotiations with the new Bush administration and also before

[87] An executive branch for national security and foreign policy matters, which has expanded in size and authority from one-man post to multiple staff organization under President Roh Moo-hyun.

resuming to the Six Party Talks (ROK National Assembly Secretariat 2005: 68). Despite North Korea's announcement on February 10, 2005, that it has acquired nuclear weapons, the Roh administration planned to continue economic assistances to North Korea in development of the Kaesong Special Economic Zone. Also, when North Korea resumed in the following year to test-fire seven missiles, including four medium-range Nodong missiles, two short-range Scud-C based missiles, and one Unha SLV, followed by the first nuclear test in October 2006,[88] the Roh Moo-hyun administration remained adamant in continued support of reconciliatory approach to North Korea, that "there should be no change to the principle and basis of the Peace and Prosperity Policy."[89] Despite North Korea's breach of the agreement made under the Six Party Talks in the previous year in 2005, South Korea put through inter-Korean summit in the following October 2007. The joint statement after the inter-Korean summit only stipulated to "work together to implement smoothly the September 19, 2005 Joint Statement and the February 13, 2007 Agreement achieved at the Six-Party Talks," and remained remote in discussion on North Korea's nuclear test in 2006.

Again, in continuity from the Kim Dae-jung administration, the sense of military superiority over North Korea lied in foundation to such reconciliatory take towards North Korea's asymmetric capabilities. While North Korea may resume back and forth to brinkmanship, as Defense Minister Yoon Kwang-woong evaluated

[88] The CNS North Korea Missile Test Database.

[89] Remarks by then Minister of Unification Lee Jong Seok, see, ROK National Assembly Secretariat (2006b); in November 2006, Prime Minister Han Myung-sook made similar remarks that "We should not in any circumstances give up dialogues with North Korea." See, ROK National Assembly Secretariat (2006c: 3).

in 2004, “the probability of war has decreased” (ROK National Assembly Secretariat 2004b: 33). As Victor Cha (2004: 116) recalled his meeting with special envoys of the Roh administration in 2003, the policy leaders of the Roh administration perceived the threat from North Korea’s possible collapse to be greater than North Korea’s pursuit for asymmetric arsenal.[90]

2) Fleeting Pursuit for Self-reliant Armament to Alliance-dependence

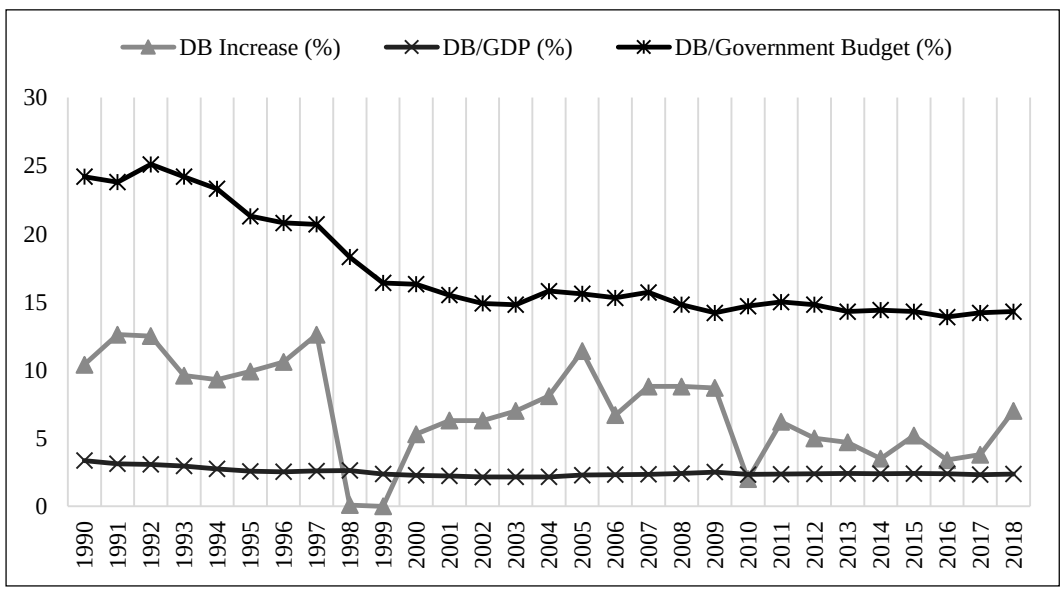
With underlying reconciliatory policy to North Korea’s asymmetric threats, the Roh Moo-hyun administration launched its landmark security strategy in building “cooperative self-reliant defense” system, which placed emphasis on arms build-up for autonomous defense, and also mid-to-long-term planning in armaments. Also, as coming into office in tight election by appealing to the times’ strong anti-American sentiment arising from the accident involving the deaths of two middle school students by the US armored vehicle, the Roh Moo-hyun administration signaled South Korea’s departure from its traditional reliance on the ROK-US alliance in the defense posture.

In numerical terms, the ambitious plan for “cooperative self-reliant defense” came with the administration’s increases in overall defense budget and FIB. Although the portion of defense budget in state finance continued to dwindle

[90] Victor Cha in meeting with special envoys of the Roh administration in 2003 found how they prioritized avoiding collapse of the regime even at the expense of proliferation. See, Cha (2004: 116).

throughout the post-Cold War era, the highest defense budget increases were observed during the Roh Moo-hyun administration, accumulating to an average of 8.4 percent throughout the five-year term, reaching the highest 11.4 percent in 2005, Figure 31. In terms of FIB, allocated for arms procurement from the total defense budget, the Roh Moo-hyun administration has shown the highest rate of increase of about sixteen percent in year 2005, Table 24.

Figure 31 South Korea's Defense Budget Trends (1990-2018), in trillion won



Year	Defense Budget (DB)	DB Increase (%)	DB/GDP (%)	DB/Government Budget (%)
2003	17.5	7	2.16	14.8
2004	18.9	8.1	2.16	15.8
2005	21.1	11.4	2.29	15.6
2006	22.5	6.7	2.33	15.3

2007	24.5	8.8	2.35	15.7

Source: ROK Ministry of National Defense, Defense White Papers, annual series.

Table 24 Force Improvement Expenditures (FIB) under Roh MH Administration, in trillion won

Year	FIB Increase Rate (%)	Defense Budget			GDP	FIB /GDP (%)	DB /GDP (%)
		Force Improvement Budget (FIB)	Force Operating Cost	Total			
2003	4.8	5.7	11.8	17.5	810.9	0.71%	2.2%
2004	9.7	6.3	12.6	18.9	876	0.72%	2.2%
2005	16.0	7.3	13.8	21.1	919.8	0.79%	2.3%
2006	2.7	7.5	15.7	22.5	966.1	0.80%	2.3%
2007	-10.9	6.7	17.8	24.5	1,043.3	0.64%	2.3%

Source: Ministry of National Defense, Republic of Korea, *Defense White Paper*, annual series.

(1) Reluctant Armaments in Pursuit for Korean Air and Missile Defense (KAMD)

Setting out for ambitious plan to enhance 'self-reliant defense system' by 2008, according to President Roh Moo-hyun's response to question in meeting with CSIS expert, the administration at the outset of the term also showed increased interests and progress in acquiring both BMD and ISR related weapons system to improve the 'self-reliant' warfare capabilities of South Korea. For major armaments, the Roh administration announced in 2003 that South Korea will develop the KAMD by 2010 and acquire early warning aircrafts, high-altitude UAVs, and reconnaissance

satellites (ROK National Assembly Secretariat 2003a: 8).

Although the KAMD looked as if the administration has adhered to the US's insistence, as observed in the latter years of Kim Dae-jung administration, the administration at the outset of KAMD conceptualization insisted on 'separate' and 'independent' operation of the KAMD. When Deputy Secretary of Defense Paul Wolfowitz came to Seoul in 2003, Defense Minister Cho Young-gil maintained South Korea's position that it lacks enough "technological and military capabilities to participate in the MD" (ROK National Assembly Secretariat 2003b: 8), and will therefore seek Korean-style, Korean-specific program.

Whether self-reliant or US-joined BMD system, however, the initial plan out for KAMD was largely put to a halt in implementation at the beginning of the administration. First, the USFK's upgrading of the Patriot batteries (from PAC-2 to PAC-3) stationed in Kwangju in 2004 stirred anti-US base and anti-BMD protests, which the Roh administration did not overlook. Second, the considerations of ROK-PRC relations, as observed in the Kim Dae-jung administration, became more resonant as the government in reconciling North Korea's asymmetric threats involved close engagement in the Beijing-led Six Party Talks. Also, China replaced the US as the largest trading partner since 2003.

Interrelated, such politically thorny KAMD system was difficult to secure enough budgets. As the government set out for ambitious timeline and plan for enhanced 'self-reliance' in defense, the armament priorities and budget allocations swayed to low-cost, less-time consuming alternatives, as well as indigenous

development programs. In deliberation of the 2004 defense budget bill at the National Defense Committee session in November 2003, Lee Yeon-sook from Grand National Party, for instance, brought up the option of acquiring the second-hand PAC-2s from Germany as part of the SAM-X program to replace the aging Nike Hercules missiles (ROK National Assembly Secretariat 2003d: 16). While progress in KAMD lingered, homegrown missiles again gained more emphasis in the Roh Moo-hyun administration. Particularly since replacement of new ROK-US missile guidelines in 2001 and joining of the MTCR in 2002, Roh Moo-hyun administration spent their defense budget on development of cruise missiles that began in the early 2000s during the Kim Dae-jung administration. With "several" test-fires of cruise missiles since 2003, according to Defense Minister Yoon Kwang-woong,[91] it was reported in media in 2006 that South Korea has developed cruise missile, known as 'Chunryong' with about 500 kilometers range.[92] With reported plans to also develop 1,000 kilometer range cruise missiles, South Korea test-fired the missiles in March 2006, and reportedly finished development of the missile by October 2007 (Korea Research Institute for National Strategy 2007: 296).[93]

Time and budget constraints indeed aggravated for KAMD as the fundamental reassessment in the US's strategic priories since 9/11 in 2001 ensued with the GPR in 2004 that laid out comprehensive transformations of the US's overseas bases including relocation and reduction of the USFK. The realignment

[91] Yonhap News, July 7, 2006.
[92] Kyunghyang, October 24, 2006.
[93] Wikileaks, December 31, 2013.

included plans for one-third troop reduction, about 12,500 troops, removal of USFK camps along the DMZ down to Seoul, and dispatch one of two US combat brigades from South Korea to Iraq, transferring operational tasks and missions to South Korean military near or at the DMZ. In tandem, the ROK-US agreement in 2006 to transfer wartime OPCON back to South Korean military by 2012[94] further diverted the Roh administration's armament priorities to filling anticipated vacuums in conventional air and maritime capabilities. In the final deliberation of FIB budget for FY2005 by the National Defense Committee, for instance, the programs for next-generation precision-guided weapons system – SAM-X program – have not been reflected at all in the budget bill. Although the military initially requested for 34.8 billion won for SAM-X program for FY2005, the budget requests have been overridden by armament priorities in conventional firepower and strike capabilities, arising from anticipated withdrawal of the Second Infantry Division to be dispatched to Iraq War. As response of budget cuts, national defense acquisition policy officer Won Chang-hwan visited Germany to inquire on second-hand PAC-2s in 2004 (ROK National Assembly Secretariat 2004c: 33).

To put it simply, South Korea's pursuit for self-reliant KAMD has seen only fleeting momentum in the first year of the administration. With armament priorities arising from more immediate security concerns against North Korea's conventional capabilities (reconciling North Korea's asymmetric threats through dialogue), transformation in the US's military presence, OPCON transfer issue, not to mention

[94] The 38th ROK-US Security Consultative Meeting, 2006.

the government's interest to maintain amicable relations with China, South Korea's BMD capabilities throughout the Roh Moo-hyun administration relied on the USFK stationed patriot systems and aegis destroyers deployed outside of South Korean waters. Even after North Korea's first nuclear test in 2006, South Korea's reluctance for autonomous multi-tier BMD system has been manifested from its final acquisition of the second-hand PAC-2s from Germany in 2007 and request of 210 SM-2 block interceptors for their expected KDX-III program, additional to SM-2 equipped KDX-II destroyers acquired earlier.

Considerations for advanced PAC-3 and upper-tier SM-3 capabilities, including joining the US-led BMD architecture have remained untapped and resisted. Even though North Korea's nuclear test renewed the government's interest in KAMD, the resilient reconciliatory policy of the government appears to have continued to intervene in South Korea's armaments. In observation of the 2007 defense budget expenditures, the total rollover – defense budget used unspent – of 396.3 billion won constituted with the most from the above KDX-III program, about thirty-two percent (124.9 billion won), and also SM-II related expenditures, about 8.4 percent (33.2 billion won) (ROK National Assembly Secretariat 2008a: 25). As the statement by Defense Minister Kim Jang-soo highlights, "firm ROK-US alliance" became indispensable to "meet current changing security situation" and "prepare against North Korea's nuclear threats" (ROK National Assembly Secretariat 2006d: 2).

(2) Ambitious Venture for Self-reliance to Alliance-reliance in ISR

Roh Moo-hyun administration's efforts to enhance South Korea's self-reliance in ISR capabilities have included ambitious ventures in acquiring reconnaissance satellites, advanced high-altitude UAVs, and early warning aircrafts. Unlike how the US's reconfiguration of USFK bases limited South Korea's investments in KAMD, the USFK's relocation and reduction appeared to dovetail with the Roh administration's emphasis on enhancing its ISR capabilities. As the reconfiguration involved transfer of operational tasks including search and rescue and surveillance near or at DMZ, South Korea government actively deliberated on plans to accelerate armaments in the ISR realms.

However, as observations on South Korea's actual defense expenditures illustrate, the US's reconfiguration of bases under the GPR appears to have worked as again restraints than stimulus in South Korea's ISR armaments. The ratio of arms spending for ISR realms remained meager in comparison to South Korea's allocation of resources to KDX-III, helicopters, patrol frigates, artilleries, and other conventional air and maritime capabilities. According to available data from Defense Acquisition Program Administration (DAPA), in 2006, the total expenditure for ISR related armaments reached only 6.5 percent (369.8 billion won) out of total FIB (5,647.1 billion won). In 2007, the expenditure fell further down to 3.2 percent (201.7 billion won) out of total FIB (6,373.4 billion won).

Although acquisition plan for high-altitude latest model of Global Hawk was

first addressed at the National Assembly on November 10, 2006, following North Korea's first nuclear test, the US remained highly sensitive in sales of the latest high-end model to foreign entity. The growing wedge between the US and South Korea's North Korea policy further contributed in the US's stricter export control. Also, while South Korea has shown progress in enhancing general out post (GOP) and frontline related infrared surveillance and electronic equipment since 2004, beginning with allocation of about 33.2 billion won for FY2005 (ROK National Assembly Secretariat 2004c: 4), the propensity to cut or delay advanced ISR-related budgets aggravated, especially when North Korea resumed to series of ballistic missile tests and nuclear test in 2006.

Instead, the Roh administration returned to reinforcing the ROK-US combined defense system as central to South Korea ISR capabilities. As Defense Minister Yoon Kwang-woong stated during the National Assembly session held on October 11, 2006, for emergency questions on North Korea's nuclear test, due to "limited detection ranges of ISR," South Korea cannot but depend on the satellite images provided by the ROK-US alliance (ROK National Assembly Secretariat 2006a). Reconsideration on wartime OPCON transfer has been also implied in his statement. By the end of the last year of Roh Moo-hyun administration, South Korea remained without sufficient self-reliant capabilities in ISR, as Defense Minister Kim Jang-soo admitted, making the ROK-US combined defense system critical countermeasure (ROK National Assembly Secretariat 2007: 16).

Roh Moo-hyun's self-reliant defense policy reiterated Kim Dae-jung

administration's interests in space, as set out for the Defense Reform Plan 2020, released in September 2005. As the South Korean policy leaders anticipated the US to transform to more flexible and reduced force deployments under the GPR, in tandem with preparations for wartime OPCON transfer, the Roh administration found advanced communications and reconnaissance satellites critical to enable autonomous monitoring of North Korea. While Roh transcended South Korea's pursuit for space-related technologies in cooperation with Russia, signing for instance the space technology cooperation pact on September 21, 2004, the progress remained limited arising from technological failures and delays in development process. The original plan to co-develop and launch the Korea Space Launch Vehicle-1 (KSLV-1) by 2005 was delayed until October 2007, followed by another one-year postponement on October 12, 2006. In December 2007, revisions were made to the cooperative pact, setting a new launch date for late 2008. Limited progress in diversification has compelled the Roh administration, however reluctant, to resume to alliance-centered and –reliant armaments in the state-of-the-art ISR capabilities.

3. Complacent Restraint under Lee Myung-bak Administration (2008-2013)

1) Complacency despite Rivalry against North Korea

With return to conservative regime under President Lee Myung-bak since 2008, South Korean government in the outset reveals more active pursuit for KAMD and also subtle changes in emphasizing cooperation with the US in the BMD system. As President Lee Myung-bak's North Korea policy, came to be known as "Vision 3000 through Denuclearization and Openness" plan during his presidential campaign, signaled shift from the decade of progressive governments' reconciliatory approach to more hardlined policy towards North Korea's asymmetric capabilities.

Although the Lee administration did not forego engagement with North Korea until enactment of May 24 measure, which was enacted in response to North Korea's torpedo attack on South Korean vessel in 2010, the conditionality has been strengthened in the outset of the government along its more hardlined, rivalry policy toward North Korea. Minister of Unification Kim Ha-joong in his first policy briefing to the President on March 26, 2008, stated that "the speed and scope of, as well as ways to push for any development in inter-Korean relations, will be decided according to progress in the North Korean nuclear issue" (Yonhap News 2008). Minister of Unification Hyun In-Taek, known as the key man in constructing the

condition-based Vision 3000 North Korea policy, stated that in order to hold a inter-Korean summit, "substantial progress on the nuclear front" must be made in advance.[95]

Chairman of the Joint Chiefs of Staff Kim Tae-young at National Assembly hearing held in March 2008 outwardly stated that South Korea's contingency plan against possible nuclear attack from North Korea would involve "identify[ing] possible locations of nuclear weapons and make a precise attack in advance" (Kim, Min-seok and Jung Ha-won 2008). Comparing to President Roh Moo-hyun's speech at the first anniversary of October 4 inter-Korean summit on October 1, 2008, wherein he recalled how the government "rejected the US's proposal for operation plan 5029" that included preemptive nature of response in case of military contingencies with North Korea, the Lee Myung-bak administration set upon more confrontational stance on North Korea.

With North Korea's nuclear issue and restoring of the ROK-US alliance set as top priorities of the government's security strategy, the policy advisors (transition team) of Lee administration conveyed how South Korea should be "flexible" to also consider the US programs in enhancing South Korea's BMD capabilities. Kim Tae-hyo in interview with media in December 2008, stated that the "President-elect Lee will be forward-looking in reviewing the participation in [US-led] MD" (ROK National Assembly Secretariat 2012a: 6).

Yet, the first year of Lee Myung-bak administration has been largely

[95] Korea Herald, February 3, 2010.

forestalled in progress in KAMD, as the President Lee's first state visit to Washington, DC, in April 2008, ensued with huge protests among South Korean public over President Lee's agreement with the US to lift the sanctions on the US beef. Although President Lee's visit to the US strived to restore the ROK-US alliance and upgrade the alliance (Ministry of Foreign Affairs 2008b), the decision to reopen South Korean market for US beef, which has been banned since 2003 after the Mad Cow outbreak, almost paralyzed his presidency in 2008. While President Lee came into office with landslide victory, the largest margin of victory by the time in presidential election in December 2007, the huge domestic turmoil surrounding the US beef made his support rate to fall drastically to twenty percent.

Moderation on BMD acquisitions were also driven by the government's consideration for economic interests. With the outbreak of Global Financial Crisis in 2008, the government remained reserved in large-bulk armaments. Although Lee Myung-bak administration began off with fifteen percent increase in FIB from the previous year, Table 25, the allocated budget for ballistic missile program in 2008 saw only 0.4% in actual expenditure (ROK National Assembly Secretariat 2009b: 41).

Table 25 Force Improvement Expenditures (FIB) under Lee MB Administration, in trillion won

Year	**Defense Budget**			**GDP**	**FIB /GDP (%)**	**DB /GDP (%)**
	Force Improvement Budget (FIB)	Force Operating Cost	Total			
2008	7.7	19	26.7	1,104.5	0.70%	2.4%
2009	8.7	20.3	29	1,151.7	0.76%	2.5%

2010	9.1	20.5	29.6	1,265.3	0.72%	2.3%
2011	9.7	21.7	31.4	1,332.7	0.73%	2.4%
2012	9.9	23.1	33	1,377.5	0.72%	2.4%

Source: Ministry of National Defense, Republic of Korea, *Defense White Paper*, annual series.

Also consideration of ROK-PRC relations also kept the Lee administration limited. Indeed, constructing South Korea's 'strategic cooperative partnership' with China has been important pillar of the Lee's new security policy as since the outset of the financial crisis, and the US's relative faltering in international presence, soon ensued with escalation in the US-China rivalry. Caught in between China's new assertiveness and the administration's priority in mending the ROK-US relations, the Lee Myung-bak administration in continuity of President Roh could not overlook the importance in maintaining the relations with China amicable. The Lee Myung-bak administration has been clearly aware of how China has replaced the US as largest trading partner since 2003, as South Korea reached trade surplus of thirteen billion US dollars from China, as to about nine billion surpluses from the US. According KITA database, by the time of Lee Myung-bak administration in 2008, South Korea's trade volume with China had grown more than twice the size of trade with the US, $178 billion and $85 billion, respectively (Sheen Seongho 2009).

Despite the Lee regime's clear turn to more confrontational, rivalry policy towards North Korea, the room for government's economic and political considerations in 2008 appears to have founded upon the policy leaders' perception on changes in North Korean threats at the time. Kim Jong-il's health issues drew

special attention from his absence from North Korea's major national ceremonies – the sixtieth anniversary of founding of the DPRK on September 9 and founding of the Korean Workers' Party on October 10 in 2008. The US and South Korean intelligence agencies later confirmed their speculations that Kim Jong-il suffered from a stroke in August. Also, the government remained less convinced on North Korea's progress in asymmetric nuclear capabilities. While the government recognized North Korea's possession of plutonium (about forty kilograms) (ROK National Assembly Secretariat 2010: 37), and possibility to produce nuclear weapons, as stated by Defense Minister Lee Sang-hee and Chairman of the Joint Chiefs of Staff Kim Tae Young (ROK National Assembly Secretariat 2008b: 22), it was unclear whether North Korea has acquired the capacity to miniaturize the nuclear warheads to be tipped on their ballistic missiles (ROK National Assembly Secretariat 2008b: 40).

While keeping the politically thorny BMD acquisitions put aside in this context, however, the rapid deterioration of inter-Korean and US-DPRK relations in 2009 and 2010 reinvigorated South Korea's BMD procurement. In demonstration against South Korea's North Korea policy, which set strong nuclear conditionality in implementation of inter-Korean exchanges and economic assistances, Pyongyang declared to nullify all agreements related to political and military confrontations in inter-Korean relations, including the 1991 Basic Agreement. On April 2009, North Korea launched long-range ballistic missile, although North Korea alleged the launch involved non-military, communications satellite. North Korea also announced its

plans to reactivate its nuclear facilities, and that it would "never" attend the six-party talks and also not abide by "any agreement" made at the six party talks including the 2005 and 2007 joint statement that outlined North Korea's denuclearization agreements.[96] Escalated tensions have culminated as Pyongyang on May 25, 2009, conducted a large-scale underground nuclear test, immediately followed by test-firing of SRBMs. The 2010 sinking of South Korean ship, Cheonan, by North Korean torpedo and bombing of South Korean naval base in Yeonpyeong Island further invigorated the Lee government to advance its KAMD system and also deliberate on South Korea's options for joining the US-led BMD.

In addition to completing the purchase of second-hand PAC-2s and SM-2s, the Lee Myung-bak administration set out for phased acquisition plans for KAMD, considering the PAC-3 for lower-tier weapons system, as stated by Defense Minister Lee Sang-hee during National Defense Committee session held on April 5, 2009, after North Korea's long-range rocket launch in the morning (ROK National Assembly Secretariat 2009a: 3). DAPA in 2009 decided to purchase two Super Green Pine radars from Israel, which were originally designed to work with the Israeli BMD system – Arrow – jointly developed by the US and Israel. Involving plans for indigenously produced systems, the Ministry of National Defense also announced plans to develop L-SAM, in addition to the M-SAM initially set out since 1998 under the Kim Dae-jung administration. The L-SAM was planned for upper-tier interceptive system, building a multi-tier defense system with the PAC-3 and M-

[96] Washington Post. 2009, April 15, 2009.

SAM batteries for lower-tier (ROK Ministry of National Defense 2014: 62-63).

Nonetheless, difficulties in securing enough budget in constructing such expanded scope of KAMD continued to be the problem throughout Lee Myung-bak administration as well. Although the total FIB increased, the portion of actual FIB in terms of GDP has shown continued fall. With limited increases in FIB, Table 26, tangible progress in KAMD construction has been far commensurate to North Korea's increasing asymmetric threats. Although the Lee government renewed interest in acquiring new PAC-3 systems in the last of year his term in late 2012, the discussions remained without conclusive deal. South Korea's formal notice to the US Department of Defense inquiring a possible purchase of the PAC-3 was made only coming into the Park Geun-hye administration in October 2013. Alliance-reliance is again continued phenomenon as the continued shipments of PAC-2s were shown to be outdated and the tracking radars on PAC-2s broke down frequently and cause difficulties in maintenance (Yun Sang-ho 2011).

Table 26 FIB, Defense Budget, and GDP (2000-2013), in US$ billion

Year	**GDP**	**Defense Budget**	**Force Improvement Budget (FIB)**	**FIB/GDP (%)**	**FIB/DB(%)**
2000	457	12.8	**4.7**	1.0%	36.9%
2001	422	11.9	**4.0**	1.0%	33.9%
2002	546	13.2	**4.4**	0.8%	33.5%
2003	608	14.6	**4.8**	0.8%	32.9%

2004	673	16.3	**5.4**	0.8%	33.2%
2005	787	20.3	**7.0**	0.9%	34.6%
2006	885	23.7	**7.9**	0.9%	33.3%
2007	970	26.5	**7.2**	0.7%	27.3%
2008	928	24.18	**7.0**	0.8%	28.8%
2009	882	24.51	**7.4**	0.8%	30.2%
2010	1010	25.5	**7.9**	0.8%	30.8%
2011	1140	28.5	**8.8**	0.8%	30.9%
2012	1160	29.3	**8.8**	0.8%	30.0%
2013	1260	31.8	**9.4**	0.7%	29.5%

Source: IISS, Military Balance, Annual series; Ministry of National Defense, ROK. Defense White Paper, annual series

As Table 27 highlights, the majority of FIB during Lee Myung-bak administration went to acquiring conventional strike and delivery systems in ships, aircrafts (helicopters), firepower (artilleries). While the new special guided weapons system encompassed investments in KAMD related armaments, most portion of the bracket has been comprised of spending on the homegrown Hyonmu-3 cruise missiles, sea-based Haesung-II/III cruise missiles – the offensive missile arsenal. From the accumulated sum of thirty-four trillion won in force improvement expenditure from 2008 to 2012, armament priorities comprised of spending in aircrafts (twenty-two percent), ships (twenty-one percent), and firepower (seventeen percent).

Table 27 Force Improvement Expenditure (2007-2012), in billion won

Year	Command, Control, Communications	Maneuver	Ships	Aircrafts	Firepower	EW, ISR*	New Special Guided Weapons System	Total
2007	314.0	539.7	998.3	1,621.0	732.2	201.7	589.1	4,996.0
2008	438.5	605.9	1,273.7	1,576.1	864.4	258.8	1,199.0	6,216.4
2009	300.7	916.6	1,287.3	1,520.7	1,001.0	512.7	1,522.7	7,061.7
2010	231.8	1,056.2	1,411.7	1,295.6	1,115.1	435.0	1,279.5	6,824.9
2011	43.2	1,025.3	1,595.9	1,575.1	1,466.2	681.0	980.6	7,367.3
2012	14.4	1,062.4	1,685.8	1,421.0	1,469.6	420.5	561.7	6,635.4
2008-2012	1,028.6	4,666.4	7,254.4	7,388.5	5,916.3	2,308	5,543.5	34,105.7
	3%	14%	21%	22%	17%	7%	16%	

Source: DAPA, *Defense Acquisition Program Statistical Yearbook*, annual series; DAPA, *Fiscal Year Balance*, annual series

*Note: In DAPA database, the formal category is designated as "Reconnaissance, Surveillance, Intelligence, EW"

As the process in KAMD lagged, the decision to postpone the wartime OPCON transfer to December 2015, during the ROK-US summit held on June 26, 2010, marked the Lee administration's shift back to alliance-reliance in BMD. Despite conservatives' more hardlined, rivalry policy on North Korea, assessments of North Korea's ballistic missile threats continued to be contested within the policy leaders as well. In response to North Korea's long-range missile-launch on April 13, 2012, Ministry of National Defense announced that "North Korean rocket did not trespass our territorial waters." While questioned about trespasses on South Korean airspace, Defense Minister Kim Kwan-jin mentioned that "because the missile flew above 151 kilometers from the ground," which to "international norms not

considered as territorial sky," "the missile did not trespass our airspace" (ROK National Assembly Secretariat 2012b: 11).

By the latter years of the term, the Lee regime turned more pragmatic, enhancing alliance-cooperation in the BMD, while postponing heavy expenditures for autonomous, multi-tier construction of KAMD. Following President Obama and President Lee Myung-bak's agreement for Joint Vision for the Alliance in June 2009, US Secretary of Defense Robert M. Gates and ROK Minister of National Defense Kim Tae Young on October 8, 2010, in Washington, DC, at the forty-second Security Consultative Meeting (SCM), signed the "Strategic Alliance 2015," setting out a new time plan and framework for OPCON transfer. They also established the "Extended Deterrence Policy Committee (EDPC) to enhance deterrence effectiveness, particularly in the area of missile defense."[97] At the forty-third SCM held in Seoul on October 28, 2011, US Secretary of Defense Leon E. Panetta and ROK Minister of National Defense Kim Kwan-jin agreed to create the "Korea-US Integrated Defense Dialogue (KIDD)," a high-level channel and framework for policy dialogues, including the Counter-Missiles Capability Committee (CMCC).[98]

[97] Joint Communiqué of the 42nd ROK-US Security Consultative Meeting, October 8, 2010, Washington, DC.

[98] Joint Communiqué of the 43rd ROK-US Security Consultative Meeting, October 28, 2010, Seoul.

2) Alliance-reliance for Pragmatism

Alike the Lee administration's recurrence to alliance-reliant armaments in the BMD, the plans for ISR acquisitions similarly retroceded to restraints. At the outset of the government, the administration's rivalry policy against North Korea accompanied introduction of new security concept, known as the Kill Chain. Following North Korea's second nuclear test in 2009 and heightened military provocations including the sinking of South Korean Cheonan vessel and shelling of Yeonpyeong Island in 2010, the Lee administration pledged to the construct the Kill Chain, a preemptive strike system against Pyongyang's nuclear and missile facilities. In tandem with envisioning a multi-tier KAMD system and preparation for OPCON transfer at the outset of the government, as elaborated above, the Kill Chain signaled the Lee government's active investments in autonomous ISR capabilities, including the HUAV Global Hawk. Nonetheless, as the actual spending on ISR realms in FY 2008 indicated, only 9.6 percent of allocated budget for HUAV and early warning radars have been spent in FY 2008 (ROK National Assembly Secretariat 2009b: 41).

As the plan for wartime OPCON transfer has been put off on June 26, 2010, to December 1, 2015, the ISR budgets illustrated further cuts, showing recurrence of similar pattern observed in previous Roh administration. To highlight, after postponement of OPCON transfer by 2015, Lee Myung-bak administration remained at an average of five percent range of defense budget increase. While previous Roh Moo-hyun upon announcement of OPCON transfer rated about annually 8.8 percent

increase in defense budget. As shown in Table 28, the spending on ISR, which increased by almost double (98.1 percent increase) from FY2008 (258.8 billion won) to FY2009 (512.7 billion won), indicated about fifteen percent cuts in FY2010 (435 billion won). Although the military contingencies involving Cheonan vessel and Yeonpyeong shelling revamped the Lee administration to increase the budget for ISR, with plans to improve existing fleets of Shinsegi UAV and acquire HUAVs like Global Hawk, actual progress in acquisitions remained limited. The Shinsegi UAV program, for instance, has been canceled upon considerations that South Korea should acquire rotary than fixed-wing UAVs (ROK National Assembly Secretariat 2012c: 13-14).

Table 28 Force Improvement Expenditure on ISR (2008-2012), in billion won

Year	FIB (A)	Total FIB (B)	Ratio (A)/(B) (%)	Force Improvement Expenditure (C)	Total FIB Expenditure (D)	Ratio (C)/(D) (%)
2008	287.8	7,681.3	3.7%	258.8	7,793.1	3.3%
2009	438.7	8,714.0	5.0%	512.7	8,809.8	5.8%
2010	355.7	9,103.0	3.9%	435.0	8,737.0	5.0%
2011	712.4	9,693.5	7.3%	681.0	9,605.3	7.1%
2012	514.8	9,893.8	5.2%	420.5	9,432.2	4.5%

Source: DAPA database.

The Global Hawk was also put off by the Lee administration's more

pragmatic approach to arms procurement (ROK National Assembly Secretariat 2008b: 60). Although the US congress granted sales of Global Hawk to South Korea in June 2009, the price of Global Hawk has continued to increase. From the initial price of 187 billion won in 2005, the unit price increased to 253.3 billion won in 2007, 326.3 billion won in 2008, 453.8 billion won in 2010, to 485.4 billion won by 2011. As stated by Minister of DAPA Roh Dae-rae in September 2009, the US put forth 455.3 billion won, making the Lee Myung-bak administration to postpone Global Hawk purchases, and instead consider investments in the ongoing indigenous development program for MUAV to upgrade to HUAV program (ROK National Assembly Secretariat 2011: 39). In this backdrop, out of total 25.1 billion won allocated for Global Hawk acquisition in FY2011, only twenty million won was spent. 4.6 billion won from the budget remained unspent, 0.4 billion won diverted to AWACS acquisition, and the rest was redirected to fund the government's oil litigations at the time (ROK National Assembly Secretariat 2012c: 28). Differently put, about ninety-seven percent of budget allocated for HUAV acquisitions for FY2011, as exemplary, has been left unspent.

Last but not least, another intriguing observation in the Lee administration's approach to ISR armaments can be observed in its policy change in the space-related ventures. While previous South Korean governments have collaborated with Russia, the first and second satellite launches in 2009 and 2010 turned out to be unsuccessful. With repeated postponements in launch schedule and ultimate failures in the 2000s, the "Joint Vision of the Alliance" statement issued as part of the Lee-Obama summit

in June 2009, touched upon extending the ROK-US cooperation to the "US-ROK civil space cooperation." While the initiative remained largely untapped, until it is redeliberated under the later Park Geun-hye administration, it is a significant turn away from previous efforts to work with non-US ally – seeking alliance-reliance and cooperation with the US in the prospective space realms, which are foundation to major powers' increasing spree of armaments encompassing the state-of-the-art BMD and ISR weapons system in space.

4. North Korea's Emergence as De facto Nuclear Power and Park Geun-hye Administration (2013-2017)

During Park Geun-hye administration, from January 2013 to March 2017, North Korea has accumulated to a total of seventy-one missile tests. In 2013, North Korea test-launched six KN-02 SRBMs, followed by nineteen in 2014, ranging from nine Scud-C based SRBMs, four Scud-B based SRBMs, two Nodong MRBMs, and four KN-02 SRBMs. In 2015, North Korea tested ten KN-02 SRBMs, three Pukguksong-1 SLBMs, and two Scud-C based SRBMs. North Korea further accelerated to a total of twenty-four missile tests in 2016, extending to test-firings of eight Musudan (IRBMs), three ER Scud-based MRBMs, five Nodong MRBMs, three SLBM Pukguksong-1, four Scud-C based SRBMs, and one Unha-3 SLV. Up to March 2017, North Korea further tested five ER Scud-based MRBMs, one Pukguksong-2 SLBM, and one unknown.[99]

In this backdrop, the conservative Park Geun-hye administration shared continued emphasis on hardlined policy towards North Korea. Although the administration's coining of the Trustpolitik at the outset of the government and 'unification jackpot' discourse intermittently throughout the term shed light to how conservative regimes were no less bound to strategic interest in seeking inter-Korean reconciliation, the Park administration maintained the principles of May 24 measure and conditionality in nuclear-first approach in dealing with North Korea.

[99] The CNS North Korea Missile Test Database.

The 2014 defense budget bill, for instance, reflected the government's initial momentum to enhance armaments in both BMD and ISR. In continuation of the plan to construct the preemptive Kill Chain system, the 2014 budget bill included the budget for not only the UAVs but also the plan to acquire military reconnaissance satellites – 720 billion won requested for FY2014, to acquire five military satellites. For KAMD, the Park administration also set to acquire early warning radar system and Patriot enhancement program. The new acquisition programs related to Kill Chain and KAMD included about fifty-three programs with budget of 387.2 billion won (ROK National Assembly Secretariat 2013c: 2-3). Aside from Kill Chain and KAMD, the Park Geun-hye administration further presented another preemptive concept – the Korea Massive Punishment and Retaliation (KMPR) plan – as the third prong of South Korea's commitment to retaliate against any North Korean threats.

However, the Park Geun-hye administration was no less rigged in actual implementation of arms acquisition plans. As shown in Table 29, the rate of increases in defense budget has shown continuous decline. From the rate of 4.7 percent increase in FY2013 from the previous FY2012, the rate of increase further dwindled to 3.5 percent in FY2014. In terms of the portion of defense budget in total GDP, the rate showed continuous fall from 2.4 percent in FY2013 to 2.33 percent by FY2017. The proportion of defense budget in total government expenditure also fell to 13.9 percent in FY2016.

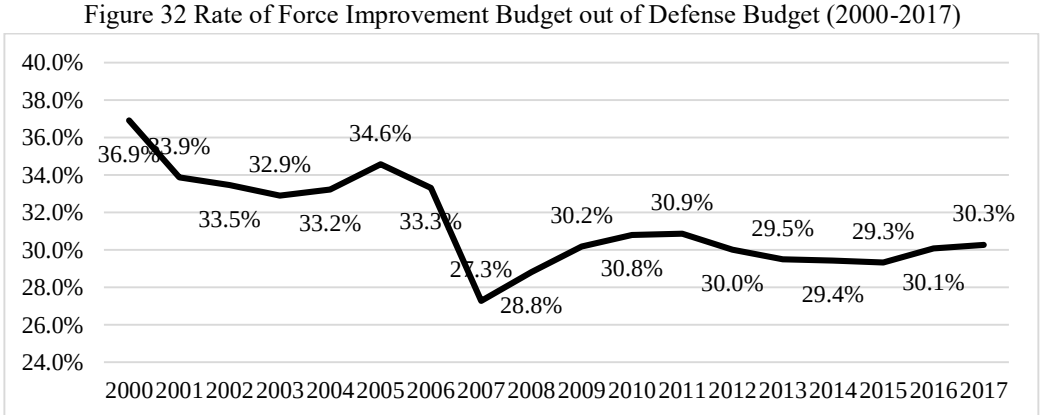
Table 29 South Korea's Defense Budget Trends (2012-2018), in trillion won

Year	Defense Budget (DB)	DB Increase (%)	DB/GDP (%)	DB/Government Budget (%)
2012	33.0	5	2.39	14.8
2013	34.5	4.7	2.41	14.3
2014	35.7	3.5	2.4	14.4
2015	37.6	5.2	2.41	14.3
2016	38.8	3.4	2.4	13.9
2017	40.3	3.8	2.33	14.2
2018	43.2	7	2.38	14.3

Source: ROK Ministry of National Defense, Defense White Papers, annual series.

In terms of FIB, the Park Geun-hye administration's declining defense budget allocated also cuts in the portion of FIB in total defense budget. From the average of 30.1 percent during previous Lee Myung-bak regime, the Park administration fell to 29.6 percent (during progressive Roh administration, 32.3 percent), Figure 32.

Figure 32 Rate of Force Improvement Budget out of Defense Budget (2000-2017)



Source: IISS, Military Balance, Annual series; Ministry of National Defense, ROK. Defense White Paper, annual series

As the following paragraphs would illustrate, without actual budget increases, recurrence to alliance-reliant armaments in the BMD and ISR is again observable from the four years of conservative Park Geun-hye administration.

1) Towards Alliance-cooperative BMD within the Parameters of the Alliance

As the Park administration emerged upon North Korea's third nuclear test, on February 12, 2013, the government has set out for active armament plans in the BMD. The gist of the defense reform plan for 2014-2030, announced on March 7, 2014, by Ministry of National Defense, placed emphasis on constructing the multi-tier KAMD for newly conceptualized "proactive deterrence strategy." Especially as Defense Minister Kim Kwan-jin admitted that South Korea's ISR armaments including the Arirang-2, Arirang-3 multipurpose satellites could not and failed to capture before and after North Korea's nuclear test (ROK National Assembly Secretariat 2013b), the Park administration began with alerted interest in both BMD and ISR.

Aside from the renewed emphasis on BMD acquisitions, the Park Geun-hye administration at the beginning of the term also appeared to be more keen in expanding the realms of cooperation in BMD with the US. Since 2013, South Korea began to participate in the Nimble Titan, a training program for BMD. Beginning from the US's unilateral BMD exercise, implemented by the US Joint Staff's Joint Theater Air and Missile Defense Organization (JTAMDO) in the late 1990s, the

Nimble Titan officially launched since 2002, conducting war games using interceptors, combined early warning, and other command and control structures and tools at operational level. Close US allies like the UK entered the program in 2003 as observer, and later participated in 2004 and 2005 as classified event. Later in 2006, the Nimble Titan program has been executed by the US Strategic Command (USSTRATCOM), which is responsible for the Joint Functional Component Command for Integrated Missile Defense (JFCC IMD). Since 2006, Nimble Titan became unclassified to bring more allied countries and partners to join the training, growing to include twenty-six NATO and non-NATO countries (Joint Air Power Competence Center 2016). While South Korea remained as observer to the program, the Park Geun-hye administration began to participate in the training since 2013 (ROK National Assembly Secretariat 2013a: 23).

Yet, aside from limited budget increases for armaments in BMD, the Park administration became further entangled in the US-China rivalry. As the Park Geun-hye government strived to improve the ROK-PRC relations since inauguration in 2013, the military cooperation and exchanges have indeed taken notable strides in progress. During President Park Geun-hye's formal state visit to China from June 27-30, 2013, the two sides agreed to reinforce "strategic cooperative partnership." In military realms, Chairman of Joint Chiefs of Staff visited China on June 4-5, 2013, for military talks with Chief of the General Staff of People's Liberation Army, and agreed to activate regular high-level military personnel exchanges and other means of cooperation, including the establishment of direct hotline between the two militaries

(ROK National Assembly Secretariat 2013c). Flying over to China on South Korea's military transport aircraft, C-130, for the first time during the visit, the ROK-PRC relations "at its lowest" during President Lee Myung-bak administration, was now to bound to better ground for cooperation under the Park administration (Hwang Jaeho 2014). As the ROK-PRC relations improved, however, speculations increased on whether South Korean government has begun "tilting" towards China. More importantly, South Korea's BMD choices including the THAAD deployment in the latter years of the term have become more constrained to unseen level of criticisms and oppositions from China as South Korea vacillated in their strategic priority between the US and China.

Aside from vacillations between the US and China relations, the slow implementation of KAMD plans arose from how the discussions on armaments during the Park Geun-hye administration have become predominated by the controversy surrounding the purchase of forty F-35 fighter-jets from the US. The discussions and criticisms on technology transfer deals and procurement decision of F-35s have indeed overpowered previous discussions on long-term investments in both the BMD and ISR. Since 2015, Kill Chain or KAMD have been barely talked about at National Defense Committee sessions at the National Assembly – replaced with inquiries on why and how the anticipated transfer of four critical technologies in purchase of F-35s has been denied by the US congress.

When North Korea launched its fourth nuclear test, allegedly first successful hydrogen bomb test, on January 6, 2016, the Park Geun-hye administration could not

but curb its strategic focus back to restoring the ROK-US combined defense system as the utmost priority. Curtailing previous cautious approach to BMD in alleviating relations with China, Yoo Jehseung, head of the Ministry of National Defense Policy Office, for instance, announced that South Korea in response to North Korea's nuclear test will "systematically enhance defense capabilities and military readiness against North Korea's nuclear and missile capabilities [with the US]." On the basis of "ROK-US tailored deterrence strategy and operation concepts against missiles," Yoo Jehseung further stated that the ROK-US will "develop operational plan, implement joint exercises, and establish operation implementation system," and thereby strive to establish South Korea's "Kill Chain and KAMD that can deter and respond at the early phase of North Korea's nuclear and missile threats (ROK National Assembly Secretariat 2016: 3). At the National Defense Committee session held on the next day of North Korea's fourth nuclear test, questions have been also raised on diverse responsive measures including redeployment of the US's tactical nuclear warheads, South Korea's own nuclear option, as well as complete review of current Kill Chain and KAMD system to consider upper-tier SM-3 and THAAD.

As North Korea further launched Kwangmyongsong-4 long-range ballistic missile on February 7, 2016, the US Department of Defense formally announced to begin negotiations of THAAD deployment under USFK on that day, drawing South Korea into political turmoil at home and also in their relations with China. Despite strong oppositions from China, the Park administration readjusted the strategic priority in again reinforcing its alliance-reliance and cooperation with the US. As

Defense Minister Han Min-koo stated, the Commander in Chief of Combined Forces Command (CINCCFC) requested to begin formal negotiations on THAAD deployment on February 2, 2016. North Korea's missile launch also led to government's attention to push for general security of military information agreement (GSOMIA) with Japan (ROK National Assembly Secretariat 2016). On June 30, 2016, a closed session on briefing on the progress in acquisition of Kill Chain and KAMD has been held by National Defense Committee at the National Assembly (ROK National Assembly Secretariat 2016).

During the forty-eighth ROK-US SCM held in Washington, DC, on October 20, 2016, South Korean government strived to reconfirm the US's commitment in the provision of extended nuclear deterrence. During the meeting, both sides reaffirmed "the US extended deterrent to continue to deter North Korean aggression and preserve stability on the Korean Peninsula and the region" as well as the need to "conduct combined exercises" to demonstrate "alliance readiness, particularly given the security environment following North Korea's fourth and fifth nuclear tests, and the multiple ballistic missile launches under the Kim Jong Un regime." South Korea and the US also agreed, "within the context of the 2+2 Extended Deterrence Strategy and Consultation Group, to examine options to take additional steps that further strengthen extended deterrence capabilities," reiterating "the firm and unwavering US commitment to the defense of the ROK using US forces and capabilities postured

on the Korean Peninsula and globally available."[100]

On July 8, 2016, the ROK Ministry of National Defense officially announced its decision to deploy THAAD under USFK. In briefing by Defense Minister Han Min-koo at the National Defense Committee of National Assembly held on July 11, 2016, Han Min-koo stated that deployment of THAAD will enable "multi-tier missile defense system, significantly enhancing the alliance's missile defense capabilities against North Korea's nuclear and asymmetric threats." Describing THAAD as "effective deterrence and defense means against North Korea's nuclear and missile threats" (ROK National Assembly Secretariat 2016: 2), South Korean government began to push for alliance-reliant BMD system despite opposition from China and domestic public. The dialogue between Defense Minister Han Min-koo and Lee Jong-myeong is especially notable, how alliance-reliant BMD system became reinforced to fill the continued vacuum in autonomous BMD capabilities (ROK National Assembly Secretariat 2016: 34): In response to Lee Jong-myeong's question on whether South Korea has enough weapons system to deter North Korea's asymmetric nuclear and ballistic missile threats, Defense Minister Han Min-koo replied that while South Korea lacks autonomous countermeasures, the ROK-US alliance provides "tailored deterrence strategy," through which South Korea can deter North Korea.

As alliance-reliance in the BMD has become restored as the strategic focus

[100] Joint Communiqué of the 48th ROK-US Security Consultative Meeting, Washington, DC, October 20, 2016.

of South Korean government, overall complacency for autonomous BMD can be observed from how South Korean government moved back and forth in implementation of the acquisition plans. The DAPA, for instance, went into sudden review of the KAMD program, halting implementation of the Chulmae-II – indigenous M-SAM for KAMD. While Defense Minister Song Young-moo called for halt of the program in November 2016, Minister again called for resume in February 2017, at 109th Defense Acquisition Program Committee meeting. Then in the 112th Defense Acquisition Program Committee meeting, held in May 2017, Minister again called for review, while again concluding on July 17, 2017, to implement the program as planned (ROK National Assembly Secretariat 2018: 12).

As observable from Table 30, the non-BMD realms continued to be allocated with higher FIB throughout the Park administration. The new special guided weapons system, which encompassed the budgets for KAMD construction, did not saw the rate of increase that was observed in the early years of previous Lee Myung-bak administration. Also, most of the budget have been directed to continuous armaments in offensive missile capabilities, including the purchase of 170 Taurus cruise missiles decided in 2013 and deployment of homegrown Hyunmoo-3 cruise missiles.

Table 30 Force Improvement Expenditure (2012-2017), in billion won

Year	Command, Control, Communications	Maneuver	Ships	Aircrafts	Firepower	EW, ISR*	New Special Guided Weapons System	Total
2012	14.4	1,062.4	1,685.8	1,421.0	1,469.6	420.5	561.7	**6,635.4**
2013	31.6	946.3	1,612.5	1,775.8	1,402.9	382.6	766.8	**6,918.5**
2014	41.5	1,045.4	1,615.0	1,949.6	1,515.2	215.2	808.6	**7,190.5**
2015	76.6	929.9	1,699.9	1,079.2	1,608.2	232.3	820.7	**6,446.8**
2016	334.1	685.2	1,510.7	1,148.6	1,668.7	187.5	785.0	**6,319.8**
2017	355.9	649.4	1,393.7	1,040.0	1,759.4	215.9	691.9	**6,106.2**

Source: DAPA, *Defense Acquisition Program Statistical Yearbook,* annual series; DAPA, *Fiscal Year Balance,* annual series

*Note: In DAPA database, the formal category is designated as "Reconnaissance, Surveillance, Intelligence, EW"

2) Constraints under Accumulated Complacency in the ISR

As mentioned earlier, North Korea's nuclear test in 2013 served as another momentum to highlight how South Korea's autonomous ISR capabilities remained restricted to "early warning radar and aegis ships." As Chairman of Joint Chiefs of Staff General Jung Seung-jo admitted, South Korea's military readiness against North Korea's nuclear and missile threats did not provide "24hrs surveillance" (ROK National Assembly Secretariat 2013a: 25).

Regardless of renewed emphasis on autonomous ISR capabilities, as Table

31 highlights, South Korea's investments in the ISR have shown limited increases. The total volume of FIB and actual expenditures on ISR have indicated continuous fall in both absolute and relative terms. Beginning with 383.9 billion won allocated for ISR force improvement in FY2013, the volume soon fell to 229.5 billion won by FY2014, to the lowest at 213 billion won in FY2016. In terms of the portion of ISR armament in total FIB, the ratio fell from 3.8 percent in FY2013 to 1.8 percent and 1.9 percent in FY2016 and FY 2017, respectively.

Table 31 Force Improvement Budget (FIB) for ISR Capabilities (2013-2017), in billion won

Year	FIB (A)	Total FIB (B)	Ratio (A)/(B) (%)	Force Improvement Expenditure (B)	Total FIB Expenditure (C)	Ratio (C)/(D) (%)
2013	383.9	10,174.9	3.8%	382.6	9,974.0	3.8%
2014	229.5	10,509.7	2.2%	215.2	10,112.8	2.1%
2015	265.7	11,014.0	2.4%	232.3	10,776.5	2.2%
2016	213.0	11,682.7	1.8%	187.5	11,124.4	1.7%
2017	236.0	12,197.0	1.9%	215.9	11,621.9	1.9%

Source: DAPA, *Defense Acquisition Program Statistical Yearbook,* annual series; DAPA, *Fiscal Year Balance,* annual series

Again, the postponement of OPCON transfer has been critical. Put off for indefinitely this time, under the Park Geun-hye administration, the FIB for ISR has shown further cuts in FY2016. 11.6 billion won was cut for budgets initially allocated for UAV, as well as the eight billion won set for acquiring the military

satellites (‘425’ project). Indeed, the ‘Project 425’ for acquisition of reconnaissance military satellites launched in 2016 have experienced repeated delays.

While continuing complacent reliance on the US’s provision of ISR capabilities, South Korean government under Park Geun-hye administration has opted for more pragmatic options. According to official from the Ministry of National Defense, on the condition of anonymity, stated that given the limited progress in autonomous military satellite acquisitions, South Korean government began to consider the option of leasing of a reconnaissance satellite, possibly from Israel, as the ministry’s initial plan to deploy five surveillance satellites between 2021 and 2022 lagged behind in schedule.[101]

The Park government’s purchase of low-cost alternatives in ISR aircraft is another support case for pragmatism, purchasing the French model of Falcon 2000 from Dassault to be refurbished and replace as the new Baekdu ISR capabilities of South Korean military. Furthermore, building upon the initiative to seek “US-ROK civil space cooperation,” first mentioned during the Lee-Obama summit in June 2009 (The White House, Office of the Press Secretary 2009), the Park Geun-hye administration tapped more onto the US-ROK space cooperation that remained far underdeveloped in comparison to the depth of bilateral alliance in other areas. On October 14, 2015, President Park Geun-hye visited the US NASA Goddard Space Flight Center as an effort to build space partnerships with the US (Spacenews 2015).

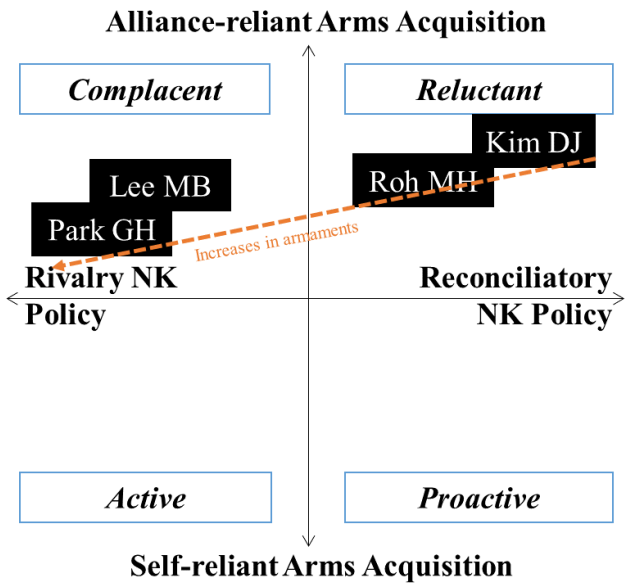
By the end of the regime, South Korea’s satellite capabilities for strategic

[101] Anonymous military official. Interview by author, April 13, 2019.

intelligence gathering have been conducted by three multipurpose satellites, known as the Arirang series. Yet, while the three satellites can monitor the ground about every eight hours, two-to-three times a day, they are insufficient in offering military information. Although military satellites have long been a central element in Seoul's defense plans and feature in the seven sections of the most recent defense white paper, published in May 2017 – for early detection of North Korean provocations; battlefield awareness; command and control intelligence systems; enhancement of combat mission training; and as a critical component in the Kill Chain system – South Korea remained confined to asymmetric division of force structure and reliance on the US's ISR capabilities.

5. Summary of Findings

Figure 33 Summary of Cross-regime Comparison



While progressive regimes have been deemed more reconciliatory to North Korea and seek more autonomous policy towards armament and alliance-reliance, when conservatives were seen as more hardlined to North Korea, favorable to pro-alliance armaments as means for security, ideological divide mattered less when it came to the BMD and ISR capabilities.

Although such ideological/policy differences did alter the government's armament goals in the BMD and ISR at the outset of the administration, both

progressive and conservative regimes recurred to reliance on the ROK-US combined defense system in BMD and ISR, while maintaining restrained growth in self-reliant capabilities. Such continuity arose from how both progressives and conservatives regardless of policy differences, preferred lower-cost, possibly homegrown, offensive missiles and strike capabilities that were seen as adequate in deterring North Korea's asymmetric threats in addition to their shared premise of the US's continued military presence. Both progressive and conservative regimes looked out for political connotations of their armament choices (pull between alliance-revisionist versus pro-alliance) between China and the US, and also at home for regime stability. Also, North Korea's repeated escalation of threats worked as common pull factor to the ROK-US combined defense system.

Under Kim Dae-jung administration (1998-2003), South Korea remained largely 'reluctant' for autonomous BMD and ISR capabilities. With reconciliatory take on North Korea – the Sunshine Policy as landmark agenda of the government – the policy leaders of Kim administration found non-nuclear North Korea's ballistic missile tests less imminent than military skirmishes across the border. While political considerations for improving inter-Korean relations restrained South Korea's armaments, particularly in the BMD, the 1997 Asian Financial Crisis economically restrained investments in ISR capabilities.

While the progressive Roh Moo-hyun administration (2003-2008) came into office with more pronounced calls for self-reliant armaments, the reconciliatory take on North Korea's asymmetric capabilities have kept autonomous armaments in the

BMD "reluctant." Although Roh Moo-hyun administration pledged for acquiring autonomous advanced ISR capabilities, 'proactive' armaments that can enhance South Korea's autonomous defense capabilities, the US's stringent export control against South Korea at the time thwarted the regime's initiatives. When the US withdrew part of their troops and military equipment from South Korea to be dispatched to fight their war in the Middle East, the fear of abandonment from the US and domestic oppositions against the government's revisionist take on the alliance have again curtailed resource allocation for big-ticket items in the ISR capabilities. With North Korea's first nuclear test in 2006, the Roh administration by and large, however "reluctant," could not but maintain alliance-reliance in both BMD and ISR capabilities.

Although conservative regime under Lee Myung-bak administration (2008-2013) resumed power with pledge for more 'active' and 'proactive' armaments in the BMD and ISR capabilities, the 2008 Global Financial Crisis and North Korea's military provocation at sea have redirected the resources to meet more pressing needs than the state-of-the-art BMD and ISR capabilities. Forging alliance-reliance as politically strategic to reinforce the US's continued military presence, the conservative regime cut and postponed plans to procure indigenously produced multi-tier KAMD system, US's advanced BMD system, and ISR capabilities such as the Global Hawk. South Korea recurred to "complacent" armaments in both BMD and ISR capabilities despite rivalry policy against North Korea.

Despite North Korea's unprecedented frequency in asymmetric nuclear and

ballistic missile since 2014 and Park Geun-hye administration's (2013-2017) rivalry policy against North Korea, the government reinvigorated South Korea's alliance-reliance as pragmatic, resuming to "complacent" armaments in autonomous BMD and ISR capabilities.

This study's cross-regime and -temporal exploration on South Korea's armaments largely disconfirms the conventional view that the progressive and conservative regimes' arms choices have been 'split' and 'sharply divided,' particularly when it comes to the state-of-the-art BMD and ISR weapons system.

V. CONCLUSION AND IMPLICATIONS

1. Limits of Arming South Korea Complacently and Moon Jae-in Administration's Perilous Venture

Despite North Korea's emergence as de facto nuclear power, South Korea has retained restrained armaments in both the state-of-the-art BMD and ISR capabilities. While the US allies under asymmetric nuclear and ballistic missile threats including Japan and Taiwan strived for active armaments in both BMD and ISR, as interrelated conventional means to detect, prevent, preempt, or at least hit-to-kill incoming targets in advance, South Korea revealed inherent tendency to recur to alliance-reliant armaments. Despite overall latency in direct asymmetric nuclear and ballistic missile threats, the US allies in Europe, including the UK and Germany shed light to how their armaments in the BMD and ISR – whether proactive or passive – engaged in diverse joint and multilateral frameworks as the means for alliance management and opportunities for technology accumulation. Placed in this context, South Korea's relative restraint appeared to be an intriguing 'complacency' for autonomous armaments against increasing threats, lukewarm interest in pursuit for technology acquisition, and also alliance deepening as means for 'additional security.'

As the cross-regime explorations into South Korea's BMD and ISR acquisitions illustrated, such restrained armaments have been of an 'accumulated

complacency' across both progressive and conservative regimes. Unlike the conventional depictions on how South Korea's restrained armaments have been the outcome of policy inconsistency arising from power transfers between two political coalitions with deep ideological schisms on North Korea and the ROK-US alliance, this research found that the restraint arises from overall continuity than change in arms acquisition patterns across the regimes. Caught in between the increasing emphasis on inter-Korean reconciliation, considerations for China's oppositions against South Korea's BMD systems, and repeated delays in OPCON transfer, both progressive and conservative governments have been limited in allocating resources for the state-of-the-art BMD and ISR ventures. As North Korea resumed and accelerated in becoming de facto nuclear power, both domestic political stripes recurred to alliance-reliance. 'Accumulated complacency' is becoming a newly institutionalized feature of South Korea's armaments against de facto nuclear-capable North Korea.

The newly inaugurated Moon Jae-in administration since May 10, 2017, has restored the progressive regime in South Korean leadership, after ten years of two conservative Lee Myung-bak and Park Geun-hye administrations. In reflection of the research's cross-regime analysis, the Moon government appears to repeat previous progressive regimes' restraint in armaments under the names of self-reliance and inter-Korean reconciliation.

The Moon administration, indeed, came into office upon unprecedented level of North Korea's nuclear and ballistic missile tests. Accruing to the fourth and

fifth nuclear tests in January 2016 and September 2016, respectively, North Korea has conducted over thirty-seven ballistic missile tests only within the months from January 2016 to May 2017. Four days after President Moon's inauguration in May 2017, North Korea tested its newly developed Hwasong-12 IRBM, followed by test-launch of the Pukguksong-2 SLBM on May 21. On July 4 and July 28, North Korea launched its first two flight-tests of the Hwasong-14 ICBMs. As the US President Donald Trump's "fire and fury" remarks on August 8, 2017, escalated the tensions in the US-DPRK relations, North Korea ensued with its sixth, the most powerful nuclear test to date (allegedly hydrogen bomb designed to be loaded on the ICBMs) on September 3, 2017, followed by test-launch of Hwasong-15 ICBM on November 29. The Hwasong-15 reportedly travelled about 960 kilometers and reached 4,500 kilometers in height, signaling North Korea's operational range of ICBMs up to 13,000 kilometers that would place Washington DC within the target range.

As North Korea emerged as de facto nuclear power in the first few months into the office, President Moon set out with adamant pledges to enhance South Korea's autonomous deterrence capabilities against North Korea's asymmetric threats. With announcement of plans in November 2017 to expand South Korea's Nuclear and WMD Response Center established within the Joint Chiefs of Staff since January 1, 2017, under the Park Geun-hye administration, President Moon also pledged on July 19, 2017, to newly establish a strategic command to counter nuclear and missile threats from North Korea by the end of the term (The State Affairs Planning Advisory Committee, Blue House 2017). President Moon also expressed his

commitment to continue and accelerate the acquisition of South Korea's three-pronged Kill-Chain, KAMD, and KMPR system, regardless of the preemptive nature of the concepts crystalized in the former two conservative administrations. Increasing the defense budget for 2018, by seven percent increases from the previous year (40.3 trillion won in 2017 to 43.2 trillion won in 2018; 2.33% of GDP in 2017 to 2.38% of GDP in 2018) (ROK Ministry of National Defense 2018), the Moon administration announced that the government will allocate 14.5 percent increases in budget for the Kill-Chain-KAMD-KMPR systems, to be completed by 2022 (The State Affairs Planning Advisory Committee, Blue House 2017). With emphasis on both BMD and ISR capabilities, deliberating on South Korea's SM-3 and SM-6 acquisitions, as well as military satellites ('425' project), JSTARS, the first year of Moon administration signaled South Korea's possible departure away from restrained BMD and ISR capabilities.

However, in resemblance to the patterns from progressive, and also conservative regimes, alliance-reliance appears to have recurred by the second year into the administration. Resonating especially how former progressive governments placed reconciliatory policy on North Korea at the forefront of the national agenda, the Moon Jae-in government's initial pledges for armaments have come to again halt along the landmark inter-Korean summits since 2018.

The Inter-Korean Military Agreement signed on September 19, 2018, after the summit between President Moon and Kim Jong-un in Pyongyang, at the foremost, included a "no-fly zone" near border areas as a new "confidence-building measures"

between the two Koreas.[102] Effective since November 1, 2018, the no-fly zone have banned fighter-jets, helicopters, as well as UAVs over forty kilometers north and south of the Military Demarcation Line (MDL) in the east and twenty kilometers in the west for fixed-wings. While the no-fly zone significantly diminishes South Korea's existing ISR capabilities that have relied on limited tactical UAVs and lower-end reconnaissance aircrafts, as Air Force Chief of Staff General Lee Wang-geun acknowledged, the Moon administration indicated a clear shift back to alliance-reliance in the ISR capabilities. The Ministry of National Defense in response to increasing controversy on how the no-fly zone would curtail South Korea's existing autonomous ISR capabilities, argued that the "gap" can be met by the advanced ISR assets of the USFK (The Strait Times 2018). As retired Lieutenant General Shin won-sik evaluated, prominent critique of the 2018 Inter-Korean Military Agreement, such no-fly zone would only rescind South Korea's past efforts to "offset" North Korea's asymmetric capabilities by enhancing "advanced surveillance, reconnaissance, and precision-strike capabilities," wherein alliance-reliance again becomes indispensable.

Reversals in plans for BMD and ISR armaments can be more explicitly illustrated from how the force improvement budget (FIB) have transformed within the Moon administration. According to the database provided by DAPA, South Korea's FIB since 2007 has newly established separate spending category for "precision-guided/new special weapons system," which encompass both advanced

[102] President Moon's special adviser Moon Chung-in told The Korea Herald at a security forum in Seoul in October 2018.

missiles and missile defense equipment. Coming into 2018, however, the category has changed to “guided weapons.” Likewise, while the budget has been allocated for “surveillance, reconnaissance, intelligence, electronic warfare systems” category, separate from the “command, control, and communications” category from 2007 to 2017, the 2018 plan changed to combine and compress the two separate sectors under “command reconnaissance” programs (Defense Acquisition Program Administration 2018).

By February 12, 2019, the Ministry of National Defense further announced to withdraw the initial plans to establish the new strategic command for North Korea’s nuclear and ballistic missile threats, as well as the plans to expand the existing nuclear and WMD response center within the Joint Chiefs of Staff. In announcement of the new Medium-term Plan for 2019-2023 in January 2019, the Moon administration further decided to replace the names of the three-pronged Kill-Chain-KAMD-KMPR system, discarding the previous ‘preemptive’ and ‘offensive’ connotations embedded in the terms, Table 32.

Table 32 Summary of Moon Jae-in Administration

First Year of Moon JI Admin (2017): Pledge for Active & Proactive Armaments
- Expand Nuclear & WMD Response Center under Joint Chiefs of Staff (Jan 2017) - New Strategic Command for nuclear and missile threats (July 2017) - Commitment to Kill-Chain, KAMD, KMPR - Ambitious Armaments: SM-3 to SM-6, 425 Project, JSTARS

Second Year (2019): Reconciliatory North Korea Policy
- Since Panmunjom, Inter Korean Military Agreement (Sep 2018)
Third Year (2018): Reversals to Previous Pledge for Active & Proactive Armaments
- Scraped plans for new strategic command and expansion of nuclear-WMD response center - Renaming of the three-pronged defense system - "precision-guided/new special weapons"(2007-2017) => "guided weapons" - "surveillance, reconnaissance, intelligence, electronic warfare systems" & "command, control, and communications" => "command reconnaissance"

While the Moon administration's emphasis on inter-Korean reconciliation, tied with repeated setbacks in OPCON transfer, have again forestalled initial plans to enhance South Korea's autonomous BMD and ISR capabilities, North Korea appears to resume to military tactics in 2019. As North Korea has reverted to military provocations and enhancements in nuclear and ballistic missile threats in the past two decades, North Korea in 2019 conducted twenty ballistic missile tests. In contrast to zero accounts in 2018, North Korea in response to limited progress in US-DPRK negotiations and inter-Korean relations, seems to resort back to military tests, Table 33.

Table 33 North Korea's Ballistic Missile Tests in 2019 (as of November 2019)

Missile Name	Date	Missile Type	Test Range (Altitude)	Number of Test in 2019
KN-23	May 4	SRBM	240km (60km)	1
	May 9		420km (45-50km) 270km (45-50km)	2
	Jul 25		600km (50km)	2
	Aug 6		450km (37km)	2
KN-24	Aug 10	SRBM	400 km (48km)	2
	Aug 16	SRBM	230km (30km)	2
KN-25	Aug 25	SRBM	380km (97km)	2
	Sep 10	SRBM	330km (50-60km)	2
	Oct 31	SRBM	370km (90km)	2
	Nov 28	SRBM	380km (97km)	2
Pukguksong-3	Oct 2	SLBM	40km (910km)	1
Total Number of Tests				20

Source: NTI Database; CSIS Database, *Missile Threat.*

Indeed, the Pukguksong-3 SLBM launch on October 2, 2019, is a clear manifestation of how North Korea's advancements in the ballistic missile capabilities have not halted regardless of the series of historic Panmunjom declaration and US-DPRK summit meeting in 2018. First hinted in August 2017 by releasing a picture of poster, showcasing the new Pukguksong-3 in development, North Korea's first

successful test-launch in 2019 illustrates this point. When launched in normal trajectory, analysts project that the new SLBM will reach a maximum range of some 1,900 kilometers, placing all of South Korea and Japan's four main islands (CSIS Missile Defense Project 2019a).

By December 2019, the Kim Jong-un regime again announced during a plenary meeting that North Korea will "continue to develop strategic weapons without interruption." Although Kim did not designate the exact weapons in development, Kim clearly implied North Korea's continued aspirations to beef-up their ICBM, SLBM, and other asymmetric capabilities, as the North Korean Central Television on the day of announcement showed the Hwasong-15 ICBM, Pukguksong-3 SLBM, which Kim Jong-un referred to as "strategic weapons"

Despite North Korea's resort back to missile tests, the Moon administration appears to repeat how South Korean government's emphasis on inter-Korean reconciliation has distorted the threat levels imposed from North Korea. At a plenary meeting of the Steering Committee of the National Assembly, held on August 6, 2019, Blue House National Security Office Director Chung Eui-yong responded that North Korea's missile launches are "no" violation of the 2018 Inter-Korean Military Agreement, and that this is the "official position of the South Korean government."[103]

Proponents of inter-Korean reconciliation have also put out more reconciliatory interpretation of North Korea's recent missile tests, that North Korea's

[103] Blue House National Security Office Director Chung Eui-yong, at a plenary meeting of the Steering Committee of the National Assembly, held on August 6, 2019.

restrictions to SRBM-tests are reflection of North Korea's 'continued commitment' in the 2018 agreements, while using the means to express North Korea's business-as-usual discontent on the ROK-US joint military exercises. Yet, such assessments considerably underestimate how the SRBMs are the immediate threat concerns for South Korea. The 2019 SRBM tests, ranging from KN-23, KN-24, KN-25, have involved all "newly-developed" types of SRBMs. Accumulating to seven test-flights since the first one on May 4 (as of November 2019), the KN-23 is North Korea's new ballistic missile with maximum range of 690 kilometers. The KN-24, first launched in August, has demonstrated the range of 400 kilometers, falling into the East Sea between South Korea and Japan. The new KN-25 is reportedly "super-large" rocket between MLRS and SRBM, reaching about 380 kilometers to the East Sea (CSIS Missile Defense Project 2019b). From at the least 230 kilometers flight range to 600 kilometers, the three new SRBMs of North Korea place South Korea under direct target range, Table 33.

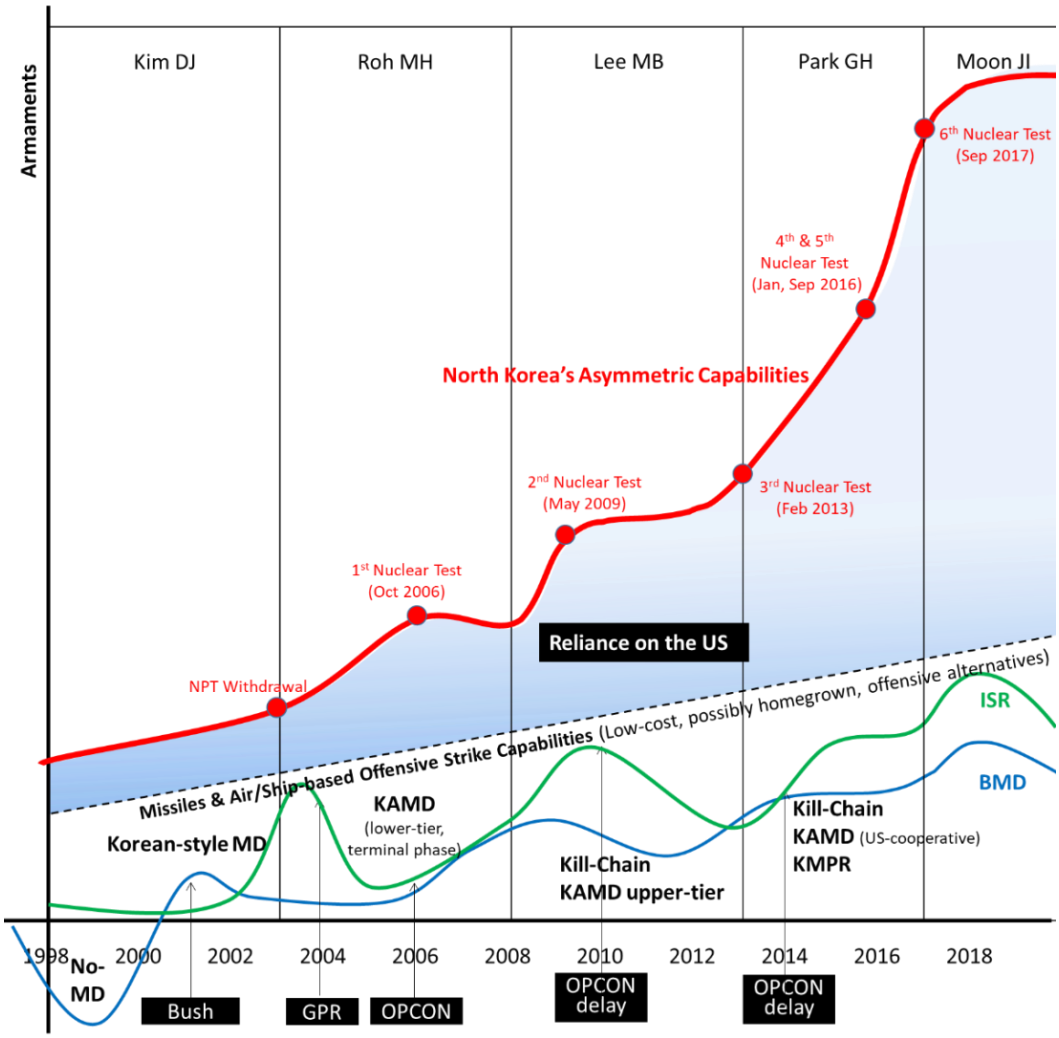
While the renewed hope for inter-Korean reconciliation in 2018 continues to linger under President Moon's determination to keep the dialogues alive, this study's look into the past twenty decades appears to imply rather grim projections. As North Korea recurred to military tests by the latter years of South Korean government and the Presidential elections in both South Korea and the US, North Korea appears more likely to resort back to more military tests in 2020. Should North Korea return to military brinkmanship along the upcoming election cycle in the US in 2020, President Moon, as South Korean leadership has in the past, will have not much

option but to reinforce alliance-reliant defense capabilities under the ROK-US combined defense system. As the Ministry of National Defense after 2018 Inter-Korean Military Agreement, called for bridging South Korea's gap in ISR capabilities by the USFK's weapons system, North Korea's reescalation of threats will recall South Korea's reliance on the US's strategic weapons system. In forecast of North Korea's return to military provocations in 2020, Shin Beomchul (2019) has proposed, for instance, reinitiating the former ROK-US Extended Deterrence Policy Committee (EDPC), first coined since the forty-second ROK-US SCM in 2010. Shin also deliberated on possible 'nuclear sharing agreement' with the US.

As this dissertation finds, however, the perils of alliance-reliance lie in reinforcing South Korea's path-dependent limitations in autonomous deterrence capabilities, Figure 34. Should South Korea recur to limited investments in the BMD and ISR and reliance on the USFK under the progressive Moon administration, diverting armament priorities to short-term, conventional, offensive missile and strike capabilities in case of renewed North Korea threats, the asymmetric division in force structure within the USFK-ROK military will deepen.

Another five years with complacent armaments, without paradigm shift to alternatives, South Korea is more likely to be continuously beset by military threats from de facto nuclear-capable North Korea, troubled position between the US and China, and increasing antagonism at home against the foundational pillars of the traditional ROK-US alliance, including the US's military presence on the Korean Peninsula.

Figure 34 South Korea's Accumulated Complacency in BMD and ISR (as of 2019)



2. South Korea's Alternatives to Restrained Armaments

South Korea needs to break away from its accumulated complacency in alliance-reliance, and shift to active and proactive armaments. While Shin Beomchul(2019)'s suggestions to seek 'nuclear sharing agreement' and reinstatement of the former ROK-US EDPC may be sound interim measures, this research confirmed that such "autonomy-security simultaneous promotion model" (Park Min-hyoung and Kwang Ho Chun 2015) can easily fall prey to limited investments and recurrence to alliance-reliance.

Serious reformulation of South Korea's defense posture is demanded, if South Korea is to bring back the wartime OPCON and replace, as planned, much of its resilient alliance-reliance with autonomous armaments. Strategic reconsiderations, operational conceptualizations, and incorporation of new technologies in rapid transformations are demanded to newly set South Korea for active and proactive armaments in defense against North Korea's de facto nuclear capabilities. In place of resource-driven armaments, investing in lower-cost and offensive strike capabilities, South Korea's arms acquisitions should be strategic-oriented.

South Korea also needs to resolve its resource-allocation problems embedded in the existing military structure. As Park Young-june observed, the chronic problem in limiting South Korea's investments in the BMD and ISR arises from the competition for armaments and defense budgets within the South Korean

military services – Army, Navy, and Air Force. As South Korea's decision-making process for arms procurement begins from each military's submission of Required Operational Capabilities (ROC), which is then deliberated under the Joint Chiefs of Staff, Ministry of National Defense, finalized under the National Defense Committee at the National Assembly, each military services inclined to submit cheaper, affordable, and short-term armaments.[104] Also, given the ambiguous division in command structure in operating the interrelated ground-, air-, sea-based BMD and ISR capabilities, the military services refrained from the BMD and ISR acquisitions that may be squeezed into their limited defense budget.[105] To enable independent and concentrated resource allocation, South Korean military demands reform and construction of separate entity that oversees and submits separate ROC for the interrelated BMD and ISR operations. The plan to newly establish the ROK Strategic Command, scraped by the Moon Jae-in administration in 2019, for instance, can be reinstated.

At the Eighth KRINS-Brookings Institution Joint Conference, held on January 15, 2020, in Seoul, the majority opinion of South Korean experts and militaries gathered at the event appeared to be again placing emphasis on the ROK-US alliance in dealing with nuclear North Korea. As former Minister of National Defense Han Minkoo stated in his opening remarks (2020), "strengthening the ROK-US alliance" and cooperation with other states are the "only one answer" to resolving

[104] Park, Young-june. November 6, 2019.

[105] Lee, Yong-dae, former Deputy Minister of Office of Military Force and Resources Management, Ministry of National Defense, interview on January 11, 2019.

North Korea's nuclear problem. Former Minister of National Defense and Chairman of Joint Chiefs of Staff, Lee Sanghee (2020) also conveyed similar position, calling for transforming the ROK-US alliance from "a conventional forces alliance into a nuclear capable alliance." The idea of "nuclear alliance" implied revisiting the options of redeploying the US's tactical nuclear weapons, strengthening the interoperability between the US's extended deterrence and South Korea's conventional precision strike capabilities, as well as upgrading to the "high-level" integrated mechanism of nuclear sharing found between the US and five NATO countries – sharing storage, maintenance, delivery systems, and operation of tactical nuclear weapons (Yoo Jehseung 2020). While the findings of the study concur in how the ROK-US alliance will continue to be both strategic and cost-effective pillar for South Korea's defense posture, this study also found that such resilient alliance-reliant approach to armaments has also lied at the foundation in prolonging the asymmetric division of force structure between South Korean military and the USFK. To ensure security and peace against asymmetric threats, especially in times when the ROK-US alliance is becoming more tested, South Korea's aspirations for self-reliant armaments need to be more active. "Korea First" armaments should be assured first, while strategic and diplomatic use of major power relations, upgrading of the ROK-US alliance become the next building blocks in pursuit of security against North Korea's asymmetric threats.[106]

[106] In reference to Yoo Jehseung's use of the term, "Korea First" (2020), Vice President of Korea Research Institute for National Strategy (KRINS).

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ABSTRACT IN KOREAN

한국의 동맹안주적 무기획득패턴 연구:

제한적 미사일방어망과 정보감시정찰체계 획득을 중심으로

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북한은 탈냉전기 이래 핵과 미사일이라는 비대칭 전력의 개발을 통해 사실상의 핵보유국으로 자리잡게 되었다. 미국의 주요 동맹국들은 비대칭 위협에 대한 재래식 억제·방어전략으로 위협을 사전에 탐지·예방(prevent)·선제(preempt)·요격(intercept) 할 수 있는 미사일방어망 (Ballistic Missile Defense, BMD)과 정보감시정찰체계 (Intelligence, Surveillance, and Reconnaissance, ISR) 분야의 무기획득에 적극적인데 반해 한국은 이 두 분야에 대한 자체전력증강에는 제한적이고 미국과의 동맹관계로부터 제공되는 핵우산(nuclear umbrella)과 같은 미국의 확장억제전략 (extended nuclear deterrence)과 주한미군에 배치된 미국의 첨단자산에 의존하는 양상을 나타내고 있다. 북한의 비대칭 전력증강에도 불구하고 한국이 미사일방어망과 정보감시정찰체계에 보다 동맹의존적인 이유는 무엇인가?

기존의 선행연구들은 한미동맹의 특수성에 입각하여 한국의 동맹의존적

무기획득, 제한적 자체전력증강을 한국에 주둔하고 있는 미국의 전력, 한미연합방위체제(ROK-US Combined Defense System) 등에 대한 합리적, 구조적, 제도와 같은 경로의존적인 현상이라고 본다. 하지만 본 논문은 이러한 결정론적이고 한국의 사례에 국한된 분석은 한국이 북한이라는 비대칭 위협에도 불구하고 유사한 안보환경 및 동맹관계에 놓인 다른 미국의 주요 동맹국들보다 제한적인 전략증강양상을 설명하기에는 불충분하다고 판단한다. 특히 이스라엘과 대만과 같은 미국의 동맹국들은 한국보다 현저히 낮은 국방비와 무기의 구입 · 개발과 관련된 방위력개선비에도 불구하고 한국보다 적극적인 자체 미사일방어망과 정보감시정찰체계를 확보하였다. 동아시아내 미국의 주요 우방국인 일본은 한국 보다 최첨단의 미국의 전략자산을 배치하고 있음에도 불구하고 미국이 제공하는 핵우산과 주일미군의 첨단자산에 '유용한 중복자산(useful redundancy)'이라고 불릴 정도의 미사일방어망과 정보감시정찰체계에 대한 자체전력을 확보하였다. 한국의 국방비는 1990년대부터 2019년 현재까지 최소 3배까지 증가해왔고, 2018년에는 세계 국방비 지출 상위 10위를 기록하면서 미국 무기의 최대수입국으로 사우디아라비아와 호주 다음으로 상위 3위로 자리매김하였다. 2015년부터는 방위력개선비 부문에서 일본을 능가하였다. 이런 배경에서 한국이 북한이라는 비대칭 위협에도 불구하고 여전히 다른 동맹국들보다 자체전력증강에 제한적인 양상은 흥미롭지 않을 수 없다.

본 논문은 국가들의 전력증강(armament)이 외부위협과 환경이라는 독립변수가 어떻게 정책결정자들의 위협인식(threat perception)과 국내환경

(domestic context)이라는 개입변수에 따라 변용된다고 주창한 신고전적 현실주의(neoclassical realism)를 적용하여 한국의 미사일방어망과 정보감시정찰체계 획득에 대한 포괄적인 국가교차(cross- national) 및 시계열(cross- temporal)의 비교연구를 하였다.

논문의 전반부분인 제3장에서는 한국을 미국의 주요 동맹국인 일본, 대만, 영국, 독일의 사례와 비교하여 한국의 케이스를 보다 객관화, 일반화하여 설명하고자 하였고, 후반부분인 제4장에서는 한국의 첫 진보정부였던 김대중 정부(1998- 2003)부터 박근혜 보수정권(2013- 2017)까지의 정권별 비교를 하여 한국이 소위 북한과 동맹에 대한 시각이 대립적인 진보- 보수의 정권교체에도 불구하고 미사일방어망과 정보감시정찰체계라는 첨단자산 분야에는 동맹안주적인 자체전력증강이라는 지속성이 나타났다고 보여준다. 본 논문을 이와 같은 현상을 한국의 안일한 (complacent), 동맹안주적인(alliance-complacent) 전력증강이라고 명명한다.

주제어: 무기획득, 한미동맹, 신고전적 현실주의 (Neoclassical Realism), 탄도미사일방어망 (BMD), 정보감시정찰체계 (ISR), 진보-보수 분열 (Progressive-Conservative Split)
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